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The Journal of Business Analysis and Control

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ADMINISTRATION

The Journal of Business Analysis and Control

JULY, 1921

PRESENT OUTLOOK FOR BUSINESS

BY JEREMIAH W. JENKS*

RESEARCH work during the last few weeks has afforded me the opportunity of meeting many prominent business men representing different sections of the country, and of listening to important addresses giving opinions regarding the present status of business. A few items seem to me of such decided importance that a resumé may be of interest to the readers of *Administration.*

At the conference of the National Foreign Trade Council held at Cleveland in early May, Mr. W. P. G. Harding, Governor of the Federal Reserve Board gave a most optimistic address. Certainly he is a person in a position to speak with authority. The federal reserve banks are now in the best position as regards their gold reserves that they have been in for a long period.

Mr. Harding is of the opinion that the worst of industrial pressure in America is over and that in consequence the banks in the United States may with safety increase their loans to sound business and industrial concerns in order to help them build up new business for the future. In fact, he goes farther than that and intimates clearly that it is the duty of banks throughout the country, with the co-operation and support of the federal reserve banks wherever necessary, thus to encourage industry by relaxing decidedly restrictions on loans.

Of course, great discretion must still be used. But the difference between placing the emphasis upon cutting down loans to force liquidation and upon encouraging loans in order to develop new business is of prime significance to business executives.

A leading lumber man from the Pacific Northwest, reporting upon the conditions in the lumber industry, said that the reorganization of business from the standpoint of prices and forced sales to adjust settlements was complete, and that executives in this section of the country were ready to go ahead on an enlarged scale as soon as the labor situation improved. They still had their difficulties with labor. It was essential, if the lumber was to be moved and manufactured, that labor costs, by reductions of wages, should be adjusted to the lower prices.

In the South, however, this same executive felt that the condition was much more favorable. Not only had

* Research Professor in Government, New York University, New York City; Joint Author, with John Hays Hammond, of "Great American Issues," reviewed in this issue of *Administration.*

prices gone down, but sufficient concessions had been secured from laborers, so that the crisis could be considered past. Industry, therefore, was ready to go ahead on a surer basis with sufficient ground for expansion.

At the annual meeting of the Chamber of Commerce of the United States, held in Atlantic City the last week in April, a noteworthy address by Secretary of Commerce Hoover was, perhaps, the most important feature of the series of conferences. Mr. Hoover, while recognizing to the full the difficulties of the situation in Europe as well as in this country, nevertheless expressed his opinion that the worst was over. Possibly the best received part of his address was that in which he dwelt upon the relations of the government to business. He asserted with the greatest emphasis that it was the duty of the government to protect its business men in the maintenance of their rights both here and abroad. He strongly implied that the present administration would be much more rigid in the defence of the persons and the property of American citizens abroad than was the preceding administration.

Another point emphasized was contained in the suggestion that the government, especially, of course, the Department of Commerce, might go considerably further than it had done heretofore in the way of making careful surveys not only in America but also in foreign countries, and giving to the business public at frequent intervals such detailed reports of business conditions in various parts of the world that security to many kinds of business transactions would be greatly increased and the development of new business promoted.

The illustrations I have selected or this brief article are typical. The spirit not only of these meetings but of many prominent business men with whom I have discussed business conditions was far more optimistic in many cases than would be anticipated. It was realized that business is not booming; but the feeling was almost universal that America has now passed the crisis, that a really firm foundation has been reached, and that while every effort must be made to lessen costs, to avoid unnecessary risks, and to see to it that the best possible methods of doing business are followed, nevertheless if such care is taken and well-informed intelligence is wisely used, there need be no fear of serious disappointment, but a practical assurance that care and knowledge and industry will meet due reward.

All of the information given in preceding paragraphs, of course, emphasizes the point that now is the time for business men to lay new stress upon the fact that a knowledge of business principles is especially needed on account of the difficulties of the time; but that when they are known and intelligently applied, they are far more sure of filling a real need than for many months in the past. Moreover, it emphasizes again the thought that this is just the time for the older executives who have decisions to make and who, in consequence, need to keep themselves individually well informed on business conditions and the way to apply principles to those conditions to get down to bed-rock principles and to build on them. I question whether the few coming months—even though they be summer months—are not likely to be those which may furnish richer rewards than usual to the men who feel, as they should feel, that they ought now to be fitting themselves to lay their plans wisely for a most stirring and, if intelligently conducted, most successful improvement in business in the fall.

STATISTICAL CONTROL OF RAILROAD OPERATIONS

BY A. M. SAKOLSKI*

STATISTICAL statements, comparisons, and analyses have been the foundation of successful achievement in American railroad operation. The modern rail transportation systems could not have developed and expanded without the administrative aid rendered by the frequent periodical records and tabulations that are constantly placed before the operating officials. These executives are required by the very nature of the railroad business to formulate policies and pass judgments regarding matters which they are physically unable to direct personally, and which, from the extended character of railroad property, they are unable personally to supervise or control. Statistical information therefore has been and is a necessity in the railroad operation. Such information, moreover, serves as the starting point for public investigation and supervision, thus enabling governmental authorities to cope with the problems of regulation while at the same time permitting operating officials to direct their efforts into proper channels of management.

The earliest railroads were of such limited mileage and were so simply organized that the executive could readily supervise, personally, every branch of operation, from the selling of tickets to the movement of trains. Hence, statistical records of early railroad operation are few and limited in scope. The economy of large-scale operation soon became manifest, and through corporate mergers and the extension of main lines and branches, railroads soon became larger and more complex business organizations than any individual undertakings under private control and operation. Experience soon demonstrated the value of statistics and records for efficient management on a large scale. In no other country have these matters received so much attention as in the United States. The economic importance of American railroads and the participation of the people as individual investors in their rapid growth and development created a demand for their proper direction and for statistics of operating results. Government regulation of railroads has promoted and assisted this demand. The statistical data required by state and federal commissions are now important sources of information for effective administrative control and are thus in many ways useful to the railroad manager, to the investor, and to the public. The use of such statistics, however, is subject to abuse and misinterpretation, unless the utmost discrimination and care are taken in analyzing the data.

Railroad statistics, because of the difficulty of obtaining satisfactory standard units of cost and of operation, are extremely troublesome to properly interpret. There are many facts outside the bare figures to be considered; and these factors are constantly changing in their relative importance. Every efficient railroad executive desires one or more stable units by which transportation costs and operating results as between different railroads or different divisions of the same railroad, or, at different

* Railroad Editor of *Savings Banks Monthly Journal*. Author of "American Railroad Economics."

periods of time, may be accurately compared. Uniform statistics, or the use of established and recognized "cost" units, however, do not admit of an actual or final comparison of the operating results of one railroad line with another, or of the operations of one period with another period; nor do "averages" covering a variety of lines and systems form a fully reliable basis for executive judgment.

In many cases, information is compiled to group facts so as to be useful to supervising officers, and to indicate to the principal executives the responsibilities for the fluctuations and the trend of operating results. Experience has demonstrated that when statistics and reports are so grouped and subdivided as to show results by divisions or districts, thus setting forth the facts for which every division executive is responsible, they have stimulated the efforts of these executives and have proved a powerful incentive toward economical operation. Similarly, whenever (as in the case of fuel consumption) statistics indicate the responsibility of the individual, the result has been correspondingly satisfactory. Sound railroad statistical information, therefore, should generally relate to operating divisions, districts or lines, following the actual plan of supervision.

A fertile cause of error in the use of railroad statistical data is the misunderstanding of the real significance of each statistical item. Too little or too much emphasis may be placed on particular units or "averages." The soundness of statistical logic in general requires that the intrinsic limitations of the figures presented be fully recognized. Lack of appreciation of this fact has led frequently to erroneous analyses and improper comparisons. Moreover, unless a statistical compilation is of some distinct value to the railroad executive, to the investor, or to the public at large, work of this character cannot be economically justified. In other words, each class of railroad data should have an underlying purpose and should be compiled, classified, and interpreted to accord with this purpose.

Having in mind these considerations, railroad statistical information may be grouped into four categories:

1. Data relating to the character of the transportation facilities.

   Under this heading are reported the physical features in so far as they influence operations and indicate the transportation facilities available to meet the traffic demands.

2. Data measuring the extent of the efficiency and economy of transportation.

   These comprise the traffic and "mile cost" statistics: They should indicate the changes in the nature and the volume of the traffic, and the transportation and handling costs expressed in standard units.

3. Data showing periodically the amount and sources of the revenues, expenses, and net earnings.

4. Data concerning the nature and distribution of the capital investment together with the corporate resources and liabilities.

The railroad operating officials are concerned mainly with the proper analysis of the first two classifications; the close study of which, every day in the year, has led to progressive improvement in the use of practically all railroad facilities. The adjustment of the quantity and quality of equipment to traffic demands, at all times on each branch and division of a railroad, means financial success of the transportation system as a whole, whereas a failure to achieve such adjustment may lead to bankruptcy and receivership. It is a fundamental principle of sound management that the equipment be neither more nor less

FREIGHT TRAIN PERFORMANCE

(Not including mixed, special, or motor car trains)

Month of ...., 191 , compared with same month of previous year

Increase, black.
Decrease, red.

ITEM	MONTH OF		INCREASE OR DECREASE	
	THIS YEAR	LAST YEAR	AMOUNT	PER CENT
1. (a) Average miles of road operated .... (Note A)				
(b) Average miles other main tracks operated .... (Note A)				
2. Train miles (Note B):				
(a) East				
(b) West				
(c) Total				
3. Locomotive miles (Note B):				
(a) Principal and helper, east				
(b) Principal and helper, west				
(c) Total principal and helper, east and west				
(d) Light, east				
(e) Light, west				
(f) Total light, east and west				
(g) Grand total, east and west				
4. Car miles (thousands) (Note B):				
(a) Loaded, east				
(b) Loaded, west				
(c) Loaded, total				
(d) Empty, east				
(e) Empty, west				
(f) Empty, total				
(g) Caboose, east				
(h) Caboose, west				
(i) Caboose, total				
(j) Total, east				
(k) Total, west				
(l) Grand total				
5. Gross ton miles (thousands) (Note C):				
(a) East				
(b) West				
(c) Total				
6. Rating ton miles (thousands) (Note D):				
(a) East				
(b) West				
(c) Total				
7. Net ton miles (thousands) (Note E):				
(a) East				
(b) West				
(c) Total				
8. Train hours (Note F):				
(a) East				
(b) West				
(c) Total				

NOTES

(A) Miles of road—miles of first running track. Miles other main tracks—miles of second, third, fourth, or other multiple running tracks, not including yard tracks and sidings.

(B) Follow "Classification of train miles, locomotive miles, and car miles," Interstate Commerce Commission, July 1, 1914. Include electric locomotive trains, but exclude mixed, special, and motor car trains. Train miles—Account 801, both ordinary and light; locomotive miles—Account 811; car miles—Account 821. Where movement of traffic as a whole is not east and west, substitute north for east and south for west, or combine north and south with east and west according to traffic movement.

(C) Gross ton miles—tons of 2,000 lbs. behind locomotive tender (cars, contents, and caboose) moved one mile; to be computed from conductors' train reports. Include electric locomotive trains, but exclude mixed, special, and motor car trains.

(D) Rating ton miles—the potential gross ton miles which would have been produced had all trains been loaded to 100 per cent of the slow freight rating for normal (summer) weather conditions, taking account of changes in rating over sections of the run. When the potential train load in the direction of favoring grades is now expressed in number of cars an arbitrary tonnage rating should be used as the basis for Item 6.

(E) Net ton miles—tons of revenue and nonrevenue freight moved one mile; to be computed from the conductors' train reports.

(F) Train hours—the elapsed time of trains between the time of leaving initial terminals and time of arrival at final terminals, including delays on the road. May be taken from conductors' train reports or from dispatchers' train sheets.

FORM SHOWING PERFORMANCE OF FREIGHT TRAINS

FREIGHT TRAIN PERFORMANCE

(Not including mixed, special, or motor car trains)

Month of ...., 191 , compared with same month of previous year

Increase, black. Decrease, red.

Item	Month of .... This Year	Month of .... Last Year	Increase or Decrease Amount	Increase or Decrease Per Cent
Averages				
9. Per freight train mile:				
(a) Locomotive miles, east (*excl. light*) ......(3a ÷ 2a)				
(b) Locomotive miles, west (*excl. light*) ......(3b ÷ 2b)				
(c) Locomotive miles, total (*excl. light*) ......(3c ÷ 2c)				
(d) Loaded car miles, east ......(4a ÷ 2a)				
(e) Loaded car miles, west ......(4b ÷ 2b)				
(f) Loaded car miles, total ......(4c ÷ 2c)				
(g) Empty and caboose car miles, east ......(4d + 4g) ÷ 2a				
(h) Empty and caboose car miles, west ......(4e + 4h) ÷ 2b				
(i) Empty and caboose car miles, total ......(4f + 4i) ÷ 2c				
(j) Total car miles, east ......(4j ÷ 2a)				
(k) Total car miles, west ......(4k ÷ 2b)				
(l) Total car miles, total ......(4l ÷ 2c)				
(m) Gross ton miles, east ......(5a ÷ 2a)				
(n) Gross ton miles, west ......(5b ÷ 2b)				
(o) Gross ton miles, total ......(5c ÷ 2c)				
(p) Rating ton miles, east ......(6a ÷ 2a)				
(q) Rating ton miles, west ......(6b ÷ 2b)				
(r) Rating ton miles, total ......(6c ÷ 2c)				
(s) Net ton miles, east ......(7a ÷ 2a)				
(t) Net ton miles, west ......(7b ÷ 2b)				
(u) Net ton miles, total ......(7c ÷ 2c)				
10. Per freight train hour:				
(a) Train miles, east (*speed in miles per hour*) ......(2a ÷ 8a)				
(b) Train miles, west (*speed in miles per hour*) ......(2b ÷ 8b)				
(c) Train miles, total (*speed in miles per hour*) ......(2c ÷ 8c)				
(d) Gross ton miles, east ......(5a ÷ 8a)				
(e) Gross ton miles, west ......(5b ÷ 8b)				
(f) Gross ton miles, total ......(5c ÷ 8c)				
(g) Net ton miles, east ......(7a ÷ 8a)				
(h) Net ton miles, west ......(7b ÷ 8b)				
(i) Net ton miles, total ......(7c ÷ 8c)				
11. Net ton miles per loaded car mile:				
(a) East ......(7a ÷ 4a)				
(b) West ......(7b ÷ 4b)				
(c) Total ......(7c ÷ 4c)				
12. Per cent loaded to total car miles (*excl. caboose*):				
(a) East ......4a ÷ (4a + 4d)				
(b) West ......4b ÷ (4b + 4e)				
(c) Total ......4c ÷ (4c + 4f)				
13. Per cent net ton miles to gross ton miles:				
(a) East ......(7a ÷ 5a)				
(b) West ......(7b ÷ 5b)				
(c) Total ......(7c ÷ 5c)				
14. Per cent gross ton miles to rating ton miles:				
(a) East ......(5a ÷ 6a)				
(b) West ......(5b ÷ 6b)				
(c) Total ......(5c ÷ 6c)				

Form Showing Performance of Freight Trains

than is required to move the traffic in an economical and efficient manner. Anything else is wasteful.

Some of the commonly used statistical units, as already pointed out, merely relate to the volume and class of traffic. These include:

1. The kinds of commodities and the passengers carried.
2. The average density or volume of the traffic.
3. The average distance each unit is hauled.

Obviously, over these matters the railroad managers have little direct control. A common carrier generally accepts for transportation the volume and kind of traffic offered and is required to convey such traffic to its destination on its own lines or to a convenient transfer station on another line. The compensation received, as is well known, is determined by competitive, political, and economic forces. Several factors, however, such as class of traffic, amount of traffic, length of haul, and difficulty in handling, affect operating costs. It is for this reason that the nature of a railroad's traffic is so carefully analyzed by operating officials in connection with the so-called "ton-mile," "passenger-mile," "train-mile," and other unit costs. These unit costs are based on averages and it is the characteristic of the statistical average to ignore the differences and disparities of the individual units on which it is based. Accordingly, in analyzing these unit costs, or in using them for purposes of comparison, caution is essential. Possible changes in physical facilities, in the character of the traffic, in climate, or in managerial policy must be kept in mind. Even in the same railroad system it is not the general practice to compare the operating efficiency of one division with another with the unit average as the sole basis.

Moreover, an intelligent judgment of economical and efficient operation requires a thorough analysis and understanding of the so-called train- and car-mile statistics. To give a complete and satisfactory picture of conditions to the railroad executive these statistics should also show the details of "equipment utilization." Only in this way will a critical analysis of traffic performance (as measured by the size of the train-load, the car-miles, and the locomotive-miles, etc.) reveal the waste of equipment through inefficient use. Thus, a freight car in the United States when in use moves on an average, 25 miles a day. As the average speed is about 10 miles per hour, this means that the car is in motion only about 2½ hours. If the time standing still is not consumed in loading and unloading or in making repairs while in use, the lost time represents waste. Similarly a freight locomotive averages less than 70 miles per day. This means less than 7 hours running time. Standing on a siding or in a yard awaiting train loading involves crew pay and fuel expense. The elimination of these losses may mean dividends to stockholders instead of operating deficits. Hence the executive should demand statistical data which indicate car-hours and locomotive-hours in use as well as car-miles and locomotive-miles.

Considerable progress has been accomplished in the improvement and standardization of railroad statistics by the United States Railroad Administration. Soon after the inauguration of government control, a "Section of Operating Statistics" was established in the United States Railroad Administration under the direction of William J. Cunningham, Professor of Transportation at Harvard University. This bureau was intended primarily to aid the director general of

DISTRIBUTION OF LOCOMOTIVE HOURS

Month of ...., 19 , compared with same month of previous year

Figures for previous year to be shown in red above figures for this year.

Item	Locomotive hours in—									
	Freight service		Passenger service		Yard switching service		Mixed, special, work service		Total train, yard, and work service	
	Hours	Per Cent	Hours	Per Cent	Hours	Per Cent	Hours	Per Cent	Hours	Per Cent
Serviceable Locomotives:										
1. On road or in *yard* switching service..................										
2. At terminals..................										
3. In enginehouse:										
(*a*) Mechanical dep't..........										
(*b*) Transportation dep't....										
(*c*) Total....................										
4. Stored....................										
5. Total serviceable (*Items 1 to 4*)..................		100		100		100		100		100
		100		100		100		100		100
	Hours		Hours		Hours		Hours		Hours	
Unserviceable Locomotives:										
6. Awaiting repairs..............		..		..		..		..		..
		..		..		..		..		..
7. Undergoing repairs..........		..		..		..		..		..
		..		..		..		..		..
8. Stored or awaiting sale.....		..		..		..		..		..
		..		..		..		..		..
9. Total unserviceable (*Items 6 to 8*)..................		..		..		..		..		..
		..		..		..		..		..
10. Grand total (*Items 5 and 9*).		..		..		..		..		..
		..		..		..		..		..
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
11. Average Number of Locomotives:										
(*a*) Serviceable..............										
(*b*) Unserviceable..........										
(*c*) Total (*Items 11a and 11b*)..................		100		100		100		100		100
		100		100		100		100		100

NOTES

Include all locomotives (steam and electric) on the road—owned, rented or leased, or assigned by U. S. Railroad Administration. Exclude owned locomotives in service on other roads.

Item 1, hours on road, represents the time in productive road and yard switching service. For locomotives in road service, it should be taken from conductors' train reports or dispatchers' train sheets, and based on hours from leaving time at initial terminal to arriving time at final terminal, including train switching time and delays on road. In yard switching service, the information may be taken from yard records, and based on hours between time locomotive leaves engine terminal to begin yard switching work and time it is returned to engine terminal.

Item 2, hours at terminals, represents time at terminals before and after the period of productive service, exclusive of enginehouse time reported in Item 3. For road service, it may be taken from enginehouse and yard records, and based on hours between time locomotive is delivered to transportation department and time locomotive leaves initial terminal; and between arriving time at final terminals and time locomotive is delivered to enginehouse forces. For yard switching locomotives, data to be taken from enginehouse and yard reports, and based on hours between time locomotive is delivered to transportation department at engine terminal and time it leaves engine terminal for yard switching work; and hours between time locomotive reaches engine terminal at end of day and time it is delivered to enginehouse forces.

Item 3a, in enginehouses for light running repairs and other enginehouse work. (See Items 6 and 7.)

Item 3b, in enginehouses after enginehouse forces have completed their work and locomotive is available for service.

Item 4, locomotives under white lead or stored, but in serviceable condition and available for service.

Item 6, in hands of or awaiting orders of mechanical department for repairs, when held more than 24 hours on that account.

Item 7, in shops or enginehouses undergoing repairs when held more than 24 hours on that account.

Item 8, includes unserviceable locomotives stored while awaiting orders for sale, demolition, or other disposition.

Item 11a, obtained by dividing the number of hours in item 5 by the number of hours in the month.

Item 11b, obtained by dividing the number of hours in item 9 by the number of hours in the month.

Form Showing Distribution of Locomotive Hours

railroads and regional directors in bringing about a centralized control of railroad operations by keeping a close check on the efficiency of operation, as measured by units of transportation, equipment utilization, and operating costs. To carry out this purpose Professor Cunningham was compelled to introduce new standard units of operating efficiency and to require additional data about details of operation, which theretofore had been little used by railroad officers or railroad regulating commissions. This statistical information has been retained and elaborated by the Interstate Commerce Commission with the result that both the public and railroad executives, themselves, now know more than they knew before about the details of the operation of their properties.

The Operating Statistics Section of the United States Railroad Administration required regular monthly reports from the railroads on the following prescribed forms:

1. Freight Train Performance
2. Passenger, Mixed and Special Train Performance
3. Locomotive Performance
4. Distribution of Locomotive Hours
5. Freight Traffic Movement and Car Performance
6. Locomotive and Train Costs
7. Condensed Income Account and Operating Expenses by Primary Accounts
8. Freight and Passenger Revenue Statistics

Forms 1 to 5, inclusive, relate to the physical performance of the railroad, and hence the dollar mark does not appear on any of the items. Thus, the figures can be compiled without waiting for the revenue accounts and consequently, it is possible to complete the reports of physical performance within 15 days after the close of the month, whereas at least 10 days more are required to draw up the income and expense statements. From an administrative standpoint it is highly important that reports of train and locomotive performance be promptly received by the operating officials, since only in this way can any drift toward inefficiency or decline in performance be readily ascertained and promptly checked.

In the words of Professor Cunningham the underlying theory of the "performance forms" introduced by the United States Railroad Administration is that:

the operating department is charged with a given number of locomotive-days and car-days, and is credited with its production in ton-miles or passenger car-miles. The production in ton-miles and passenger car-miles, in turn, is related to the operating department's expenditure in train-miles, locomotive-miles, and car-miles, and the supplementary statistics throw light on the components of the train-load and the car-load, as well as upon the effect of changes in the nature of the commodities handled, in the balance of traffic, in the proportion of fast and way-freights, and in other physical, traffic, and operating features. The desiderata are that each locomotive and car should be employed to its capacity, and should produce the maximum of ton-miles with the minimum of train-, locomotive-, and car-miles. The statistics show clearly the relation between the ton-mile production and the utilization of equipment, and the relation between the actual and potential train production. The physical performance statistics are compared at a later date with the cost statistics provided by Forms 6 and 7. These two forms are due to be completed on the 30th day of the month following that to which the figures apply.[1]

A distinctive feature of the new railroad operating statistics is the com-

[1] "The Accomplishments of the United States Railroad Administration in Unifying and Standardizing the Statistics of Operation" by Mr. J. Cunningham in *The Annals*, November, 1919.

FREIGHT TRAFFIC MOVEMENT AND CAR PERFORMANCE

(Including freight and mixed trains)

Month of ...., 191 , compared with same month of previous year

Increase, black. Decrease, red.

ITEM	MONTH OF		INCREASE OR DECREASE	
	THIS YEAR	LAST YEAR	AMOUNT	PER CENT
1. Average miles of road operated (freight and mixed service)				
NET TON MILES (Revenue and nonrevenue)				
2. Net ton miles, freight trains (*thousands*) .... (*Note A*)				
3. Net ton miles, mixed trains (*thousands*) .... (*Note A*)				
4. Net ton miles, total (*thousands*) .... (*Note A*)				
TRAIN MILES				
5. Train miles, freight trains .... (*Item 2c, Form OS-1*)				
6. Train miles, mixed trains .... (*Item 6, Form OS-2*)				
7. Train miles, total				
TOTAL FREIGHT CAR MILES				
8. Loaded car miles (*thousands*) .... (*Note B*)				
9. Empty car miles (*thousands*) (*excl. caboose*) .... (*Note B*)				
10. Total car miles (*thousands*) .... (*Note B*)				
AVERAGE NUMBER OF CARS				
11. Cars owned .... (*Note C*)				
12. Serviceable cars on line daily .... (*Note D*)				
13. Total cars in or awaiting shops daily				
14. Total cars on line daily .... (*12+13*)				
AVERAGES				
15. Net ton miles per mile of road per day ... *4÷(1×days in mo.)*				
16. Net ton miles per train mile .... (*4÷7*)				
17. Per cent cars on line to cars owned .... (*14÷11*)				
18. Per cent cars in or awaiting shops to total cars on line ... (*13÷14*)				
19. Net tons per loaded car mile .... (*4÷8*)				
20. Per cent of loaded to total car miles (*excl. caboose*) ...... (*8÷10*)				
21. Car miles per car day .... (*Note E*)				
22. Net ton miles per car-day .... (*Note F*)				
TON MILES AND CAR MILES OF WORK EQUIPMENT IN REVENUE TRAINS (Included on Forms OS-1 and OS-2, but excluded from Form OS-6.)				
23. Net ton miles, freight trains			• • • •	• •
24. Net ton miles, mixed trains			• • • •	• •
25. Loaded car miles, freight and mixed trains			• • • •	• •
26. Empty car miles, freight and mixed trains			• • • •	• •
27. NUMBER OF CARS STORED			• • • •	• •

NOTES

(A) If net ton miles based on conductors' train reports are not available for last year, report for Item 4, last year, the total net ton miles (revenue and nonrevenue) computed from waybills, waybill ton miles to bear prefix letter "W."

(B) Total freight car miles (excluding miles made by caboose and work equipment) in freight and mixed trains.

(C) Average number of freight cars owned, excluding caboose and work equipment.

(D) Freight cars on line, both home and foreign, including private line and U. S. Railroad Administration cars. Caboose and work equipment should be excluded. The number of cars on line daily is to be determined by an inventory taken on the first day of the month, with a daily debit or credit adjustment from the summary of the interchange reports and the repair tracks and shop reports. The figures reported for Items 12 to 14, inclusive, are to be the sum of the cars on the line each day divided by the days in the month. An average of two, three, or four inventories throughout the month will not be acceptable unless corrections are made daily from the interchange reports and each day taken into account in computing monthly averages.

(E) To obtain average miles per car day divide total car miles (Item 10) by total cars on line daily (Item 14) and divide again by the number of days in the month.

(F) Divide Item 4 by Item 14 and divide again by the number of days in the month.

FORM SHOWING MOVEMENT OF FREIGHT TRAFFIC

LOCOMOTIVE AND TRAIN COSTS

Month of ...., 191 , compared with same month of previous year

Increase, black. Decrease, red.

ITEM	MONTH OF .... THIS YEAR	LAST YEAR	INCREASE OR DECREASE AMOUNT	PER CENT
EXPENSES (*Note 1*)				
1. Locomotive repairs—freight				
2. Locomotive repairs—passenger				
3. Locomotive repairs—total .... (*Note 1-a*)				
4. Enginehouse expenses—freight				
5. Enginehouse expenses—passenger				
6. Enginehouse expenses—total .... (*Note 1-b*)				
7. Train enginemen—freight				
8. Train enginemen—passenger				
9. Train enginemen—total .... (*Note 1-c*)				
10. Locomotive fuel—freight				
11. Locomotive fuel—passenger				
12. Locomotive fuel—total .... (*Note 1-d*)				
13. Other locomotive supplies—freight				
14. Other locomotive supplies—passenger				
15. Other locomotive supplies—total .... (*Note 1-e*)				
16. Subtotal—freight .... (*Items 1, 4, 7, 10, 13*)				
17. Subtotal—passenger .... (*Items 2, 5, 8, 11, 14*)				
18. Subtotal—freight and passenger .... (*Items 3, 6, 9, 12, 15*)				
19. Trainmen—freight				
20. Trainmen—passenger				
21. Trainmen—total .... (*Note 1-f*)				
22. Train supplies and expenses—freight				
23. Train supplies and expenses—passenger				
24. Train supplies and expenses—total .... (*Note 1-g*)				
25. Grand total—freight .... (*Items 16, 19, 22*)				
26. Grand total—passenger .... (*Items 17, 20, 23*)				
27. Grand total—freight and passenger .... (*Items 18, 21, 24*)				
FREIGHT TRAIN SERVICE				
28. Locomotive miles—freight .... (*Item 3-g, Form OS-1*)				
29. Locomotive miles—mixed .... (*Note 2*)				
30. Locomotive miles—special .... (*Note 2*)				
31. Locomotive miles—total .... (*Items 28 to 30*)				
32. Train miles—freight .... (*Item 2-c, Form OS-1*)				
33. Train miles—mixed .... (*Note 2*)				
34. Train miles—special .... (*Note 2*)				
35. Train miles—total .... (*Items 32 to 34*)				
36. Gross ton miles—freight trains (*thousands*) (*Item 5-c, Form OS-1*)				
37. Gross ton miles—mixed trains (*thousands*) .... (*Note 3*)				
38. Gross ton miles—special trains (*thousands*) .... (*Note 3*)				
39. Gross ton miles—total (*thousands*) .... (*Items 36 to 38*)				
AVERAGES—FREIGHT TRAIN SERVICE				
COST PER LOCOMOTIVE MILE (*cents*)				
40. Locomotive repairs .... (*1 ÷ 31*)				
41. Enginehouse expenses .... (*4 ÷ 31*)				
42. Enginemen .... (*7 ÷ 31*)				
43. Locomotive fuel .... (*10 ÷ 31*)				
44. Other locomotive supplies .... (*13 ÷ 31*)				
45. Total locomotive service .... (*Items 40 to 44*) (*16 ÷ 31*)				
COST PER TRAIN MILE (*cents*)				
46. Locomotive repairs and enginehouse expenses .... (*1 + 4*) ÷ *35*				
47. Locomotive fuel .... (*10 ÷ 35*)				
48. Other locomotive supplies .... (*13 ÷ 35*)				
49. Enginemen .... (*7 ÷ 35*)				
50. Trainmen .... (*19 ÷ 35*)				
51. Train supplies and expenses .... (*22 ÷ 35*)				
52. Total .... (*Items 46 to 51*) (*25 ÷ 35*)				
COST PER 1,000 GROSS TON MILES (*cents*)				
53. Locomotive repairs and enginehouse expenses .... (*1 + 4*) ÷ *39*				
54. Locomotive fuel .... (*10 ÷ 39*)				
55. Other locomotive supplies .... (*13 ÷ 39*)				
56. Wages, enginemen and trainmen .... (*7 + 19*) ÷ *39*				
57. Train supplies and expenses .... (*22 ÷ 39*)				
58. Total .... (*Items 53 to 57*) (*25 ÷ 39*)				

FORM SHOWING LOCOMOTIVE AND TRAIN COSTS

LOCOMOTIVE AND TRAIN COSTS

Month of................., 191 , compared with same month of previous year

Increase, black. Decrease, red.

ITEM	MONTH OF.............................. THIS YEAR	LAST YEAR	INCREASE OR DECREASE AMOUNT	PER CENT
PASSENGER TRAIN SERVICE				
59. Locomotive miles, passenger ....(*Item 2-c, Form OS-2*)				
60. Locomotive miles, mixed ....(*Note 2*)				
61. Locomotive miles, special..........................(*Note 2*)				
62. Locomotive miles, total..........................(*Items 59 to 61*)				
63. Train miles, passenger..........................(*Item 1, Form OS-2*)				
64. Train miles, mixed..........................(*Note 2*)				
65. Train miles, special..........................(*Note 2*)				
66. Train miles, total..........................(*Items 63 to 65*)				
67. Pass'r train car miles, pass'r trains.......(*Item 3-e, Form OS-2*)				
68. Pass'r train car miles, mixed trains ....(*Item 8-e, Form OS-2*)				
69. Pass'r train car miles, special trains.....(*Item 13-b, Form OS-2*)				
70. Pass'r train car miles, total..........................(*Items 67 to 69*)				
AVERAGES—PASSENGER TRAIN SERVICE				
COST PER LOCOMOTIVE MILE (*cents*)				
71. Locomotive repairs..........................(*2 ÷ 62*)				
72. Enginehouse expenses..........................(*5 ÷ 62*)				
73. Enginemen..........................(*8 ÷ 62*)				
74. Locomotive fuel..........................(*11 ÷ 62*)				
75. Other locomotive supplies..........................(*14 ÷ 62*)				
76. Total locomotive service ....(*Items 71 to 75*)(*17 ÷ 62*)				
COST PER TRAIN MILE (*cents*)				
77. Locomotive repairs and enginehouse expenses.......(*2 + 5*) ÷ *66*				
78. Locomotive fuel..........................(*11 ÷ 66*)				
79. Other locomotive supplies..........................(*14 ÷ 66*)				
80. Enginemen..........................(*8 ÷ 66*)				
81. Trainmen..........................(*20 ÷ 66*)				
82. Train supplies and expenses..........................(*23 ÷ 66*)				
83. Total.......................... (*Items 77 to 82*)(*26 ÷ 66*)				
COST PER PASSENGER TRAIN CAR MILE (*cents*)				
84. Locomotive repairs and enginehouse expenses.......(*2 + 5*) ÷ *70*				
85. Locomotive fuel..........................(*11 ÷ 70*)				
86. Other locomotive supplies..........................(*14 ÷ 70*)				
87. Wages, enginemen and trainmen ....(*8 + 20*) ÷ *70*				
88. Train supplies and expenses..........................(*23 ÷ 70*)				
89. Total..........................(*Items 84 to 88*)(*26 ÷ 70*)				
AVERAGE PRICE OF FUEL				
90. Average price of coal per net ton ....(*Note 4*)				
91. Average price of fuel oil per gallon ....(*Note 4*)				

NOTES

1. Divide expenses between freight and passenger services in accordance with "Rules governing the separation of operating expenses between freight service and passenger service," Interstate Commerce Commission, July 1, 1915, with following exceptions.

(*a*) Items 1-3, exclude cost of repairs to yard switching locomotives. Otherwise follow Accounts 308 and 311 I. C. C. Classification of operating expenses.
(*b*) Items 4-6, follow I. C. C. Account 400, Enginehouse expenses—Train.
(*c*) Items 7-9, include wages of motormen on electric locomotives, but exclude wages of motormen on motor car trains. Otherwise follow Accounts 392 and 393, I. C. C. Classification of operating expenses.
(*d*) Items 10-12, include total of I. C. C. Account 394 (Fuel for train locomotives) and the electric locomotive proportion of Accounts 395 and 396 (Train power produced and Train power purchased). Exclude motor car train proportion of Accounts 395 and 396.
(*e*) Items 13-15, follow I. C. C. Accounts 397, 398, and 399, Water for train locomotives, Lubricants for train locomotives, and Other supplies for train locomotives.
(*f*) Items 19-21, exclude conductors and trainmen of motor car trains. Otherwise follow I. C. C. Account 401, Trainmen.
(*g*) Items 22-24, exclude all charges on account of motor car trains. Otherwise follow I. C. C. Account 402, Train supplies and expenses.

2. Locomotive miles and train miles in mixed and special train service should be divided between freight and passenger services on basis of miles of freight and passenger train cars in mixed and special trains, respectively.
3. Gross ton miles in mixed and special train service should be computed from conductors' train reports in same manner as gross ton miles in freight train service, but should include only the gross tons of freight cars, contents, and caboose.
4. Average price of fuel as charged to I. C. C. Account 394 (Items 10-12 on this form).

FORM SHOWING LOCOMOTIVE AND TRAIN COSTS—*Continued*

parison of the potential or "rated" performance of the railroad equipment used with the "actual" performance. Thus, the operating division heads are required to report each month the potential or rated ton-miles, as well as the ton-miles that were actually produced. The rated ton-miles are the potential or maximum ton-miles which would have been produced had the trains been loaded to 100 per cent of locomotive hauling capacity, taking into consideration the dead weight of the cars, the climate conditions and the physical characteristics of the track. Hence, the efficiency index of train-loading can be readily ascertained from the ratio of the gross ton-miles actually handled to the rated or potential gross ton-miles computed for each locomotive in use on each operating division.

Another feature of the operating statistics used by the Railroad Administration is the *time element* as an index of efficiency. This as already pointed out is important in a correct judgment of railroad operating results.

If the volume of traffic at each station is not commensurate with equipment capacity or adjusted to the kind and quality of the equipment supply, heavy car loads and train loads (both of which have hitherto formed the leading operating efficiency indexes) may hinder both *train speed* and *train frequency*. Though economical railroad management aims to handle traffic at the lowest operating costs, the interests of the public require it to be handled speedily. Moreover, delays caused by awaiting a train-load equal to the rated hauling capacity of the locomotive may result in an operating loss rather than a gain. The same number of cars and locomotives when loaded lightly so as to promote speed of movement, may move considerably more traffic in a given period than when held up at stations and division points awaiting a full load. Accordingly, the train-hour, and locomotive-hour units have been introduced to measure the time factor in railroad operation. By coordinating the time factor with the performance and cost factors, a more correct judgment can be formed of railroad efficiency and economy.

The application of railroad statistical methods to other lines of business is gradually advancing and is bound to have a potent influence on administrative control. The growth in the size of the industrial plant, the importance of watching costs in relation to output, and the gradual standardization of industrial processes is leading to the use of statistics which measure production costs accurately and adequately. Such statistics are already in use in the coal, the steel, and the packing industries. The Federal Trade Commission, through its investigations and publications, is endeavoring to bring about accounting uniformity and the standardization of operating methods already promoted and enforced on the railroads by the Interstate Commerce Commission. With all due consideration for uniformity in accounting and cost-keeping methods, however, it should always be borne in mind that the complexities of business organization and corporate activities do not render possible absolutely accurate statistical statements of operating costs or financial results. Almost every statement of costs and profits of a going concern, no matter how carefully and conscientiously drawn up is, at best, an estimate and not a statement of positive truth. Business operations represent a continuous process. Actual results can be definitely stated only when the business is wound up and all assets realized in the form of cash.

BUDGETING THE ADVERTISING PROGRAM

BY W. A. McDERMID*

THE regrettable and admitted wastes of advertising expenditures do not arise principally from lack of sufficient formal machinery for their control. Physical control is too simple a problem (as contrasted for example with control of production) to be a real factor in wastage, or to warrant any considerable discussion by itself. The fault lies in the kind of thinking that is done about advertising and its relation to the rest of the business; and the problem of budgeting the advertising program depends principally on the position which advertising occupies in the minds of the management of the business.

Advertising is used herein in its broadest sense, to include the building of good-will and the various means of education and sales promotion through the printed and written word. It may range from a very modest trade paper campaign or an occasional direct-by-mail effort, to the activities of the highly organized department, with its research functions, its ramifications into matters of personnel, morale, etc., and all of the countless uses to which men have been able to direct various forms of advertising effort to advantage.

Advertising suffers from the fact that it still bears in the main an anomalous relationship to business. It is quite a different relationship from that of production, sales, or finance. While these factors may be and are approached by the executive management in each business from a wide variety of viewpoints, some wise and some otherwise, nevertheless these great functions are at least accepted without comment as an integral part of business; are just assumed to belong, naturally, to the business structure. This is not so in far too many cases with advertising.

The fundamental weakness in the situation can be summed up in the recognition of the feeling that advertising is something extraneous to the business. And this is a reference to the mind of the management and does not refer to the occasional differences, even within a concern strongly committed to intelligent advertising between members of the selling force and the house, as to the specific value of the work. Neither does it seek to ignore or underestimate the vague feeling on the part of some, that advertising is something which savors so much of the artistic, or of the dreamer, or of the hot-air artist, that it is too trivial for the earnest business man to take much stock in, even in the face of the evidence in its favor.

Advertising has suffered more at the hands of its overenthusiastic friends than from its enemies. It has been peculiarly liable, from its nature as a business tool, to be prostituted and exploited. It has shady spots in its early history, and all of its practitioners and exponents have not been either competent or sincere. There is, therefore, a considerable justification for the fact that in so many instances the advertising program is not the matter of concern it might well be.

From that situation are exempt, of course, those concerns (already many and growing in number all the time) to whom their monthly advertising bills are as much a matter of course as their

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rent, and whose advertising executive is a real factor in the councils of the company.

II

But the cold fact remains—to which no man interested in the broader development of advertising as a great economic force can afford to blind himself—that to a very large number of concerns, and among them some whose expenditures have been considerable, their faith is but lukewarm and does not stand the test of fire.

Without attempting to touch anything more than the high spots in seeking the reasons for this, the following may be adduced:

1. That advertising is by no means so exact in its processes nor so tangible in its results as are so many other activities of business.
2. That in too many instances it has been administered solely by those with a professional rather than a mercantile viewpoint and training.
3. That it has been surrounded with an unjustified atmosphere of mystery due to the highly technical character of some of its methods and processes.

From these, and of course other causes, has arisen a deplorable lack of understanding of either the functions, the processes, or what is more vital, the limitations of advertising, which has prevented it from winning the acceptance it ultimately will into the warp and woof of the business fabric.

Out of this, more than out of inadequate methods of planning and control, arises the tragic and regrettable waste of so much advertising expenditure, and the assertion will be ventured that the principal waste comes from a false approach to the thinking on the subject rather than from technical mistakes of administration.

For the business to which advertising is some vague form of pipedream, or a subtle form of blackmail from which there appears to be no easy escape; or something we must do because our competitors do and for no reason inherent in our own business plans; or something directed toward the vanity of our organization rather than toward the market; for such an organization the budget need only be an estimate of expenditure with a most doubtful status in the accounting department, approved with mental reservations, and subject to change or total sacrifice at any whim.

Until the mental attitude of a concern and of everyone in its management toward the advertising is clear and sound, any discussion of the budgeting of a program is apt to be largely academic, because its program will never be a proper factor in its plans nor in its net profits. It is not, I think, joining the ranks of the ultra enthusiasts to say, parenthetically, that the full values of an advertising program will never be secured until every member of the organization understands its fundamental purposes; but this is of course in no sense a prerequisite to the formation or operation of the plan.

The business which has a fairly clear understanding and a belief in the legitimate functions of advertising, that uses it with at least the same amount of enthusiasm and intelligence as it uses its machinery, its salesmen, and its general organization, has quite a different problem to face from that of the concerns described above.

III

In the past five years the advertising manager, generically, has become a changed man—a different kind of an executive. If at one time it might be charged that he was primarily a technician, absorbed in the fascinating details of a profoundly interesting job, there is very little basis for that descrip-

tion in most cases today. He is very rapidly becoming, or has already become, a marketing man. He has been forced to be something of an accountant. He is by way of being a pretty good business man, with tempered, seasoned judgment and a knowledge of the broad aspects of his business to balance his imaginative and creative faculties.

While this change has been an evolution over a period of years, growing out of an extraordinary process of education fostered by advertising men themselves in the development of their work, the war period was greatly responsible for it. Advertising and its methods suddenly went on trial as defendants to prove their case, and while it is unnecessary to point out in detail what an impressive favorable account they rendered of themselves, it is worth calling attention to some of the things that were revealed, and which emphasize the need for a new approach to the subject on the part of the management.

Nothing could have brought home more dramatically to the apostle of advertising or to the manufacturers who had built their business through it the extent of the misunderstanding of its true status in business, than the passage of the excess profits tax. This, while conceding a valuation to a good-will purchased outright (however fictitious) denied a good-will value for tax purposes to the business which had built up a very real good-will through years of intelligent advertising effort.

If any further shock were needed to the nerves, the professional pride, the business judgment of the pocketbook, as the case was, it was supplied by the wild statements made in Congress during the debates on a projected tax on advertising, and further by the contrast between the economical and business-like use of advertising by the British Government during the war as contrasted with our own handling of our war advertising. That it was effective, and that it proved itself as never before, is perfectly apparent, but it was neither economical nor business-like because of this misunderstanding of its functions and processes. It did more than to give the business world a new conception of the possibilities and powers of advertising, which it did in a way that impressed even the most superficial and uninterested. It taught all the thoughtful men who have any practical relation to advertising that there must be still higher and many more steps in their thinking.

And for the first time there came into the life of many a manager a vision of the necessity of a new form of accountancy as applied to advertising, or a modification of the accounting methods of the concern to meet the needs of the advertising department. This is a present problem; it is far from anything like a solution and there is no formula available for it. It is a part of the same process of thinking that is completely revising the relations of the sales department to the accountant, and that is putting sales policy-making, control and research, on almost a totally new basis.

There is, in fact, an absolute parallel, step by step and item for item, in the new vision which has come into sales departments, and that which is animating the thoughtful and progressive advertising managers, and the cause is not far to seek when the absolute interrelationship of the sales and advertising effort is clearly understood.

IV

Without going in: the perennial discussion of the relative status of the sales and advertising manager in the organization, it may be stated that as a safe rule, the man who determines the sales policy of the company, whatever

his title, is the man who should finally co-ordinate the advertising with the sales program before it goes to the higher management for final approval. This could readily open the way to a not wholly irrelevant discussion of the entire question of functional relations between the personnel of the two departments, or of the divisions where they operate under a single head; a subject which would bear some discussion in the interest of better efficiency. But if that rule is adopted (and it will be bitterly and perhaps properly opposed in some cases) it will go far to fix the proper status of the advertising program in the general scheme of things.

If we may concede that the management is thoroughly "sold" on its advertising, and has a definite picture of what it is proposed to accomplish by it, we face four major problems in the preparation and operation of the plan. These may be capitulated as follows:

1. The method of basing the appropriation.
2. The accounting problems.
3. The form of the budget.
4. The physical control of the appropriation.

Every one of these problems is highly controversial, and contact over a period of years with several hundred advertisers, wherein these problems have been debated, and data and opinion exchanged, raises a question as to whether any standards of practice will ever be set up that are universally applicable. Through the data service, the committee work, and the general meetings of the Association of National Advertisers, a very considerable amount of improvement in method has been achieved over a period of ten years, and the rapidity of developments in the past few years of that period gives promise of still greater progress. At present, it is only possible to outline the general methods of approach, and some of the difficulties involved.

An appropriation should be based on analysis, instead of on guess, hope, or fear.

Certainly, the way to approach the matter is not by setting aside a certain percentage of our past year's sales and saying, "We have this much to spend, boys; let's spend it."

For lack of proper analysis, many concerns who need advertising badly are not using it; in some instances the reverse is true; in others they advertise too much and too quickly.

As this is written a concern which has been advertising to an extent and in mediums which have raised doubt in the minds of thoughtful advertisers, has just completely abolished its advertising department. They were either wrong then or now!

V

Analysis will often develop unthought-of channels of expansion, or unearth problems which must be met and solved before the advertising can succeed.

A typical form of analysis, useful only in proportion as the investigation is thorough, is as follows:

1. Class of commodity
   - (a) As to Necessity.
   - (b) " " Utility.
   - (c) " " Luxury.
2. Market
   - (a) Necessity. Characterized roughly by universal market, small margin, price competition or market conditions controlling price.
   - (b) Utility. Fair market, usually must be created or developed; good margin, moderate competition.
   - (c) Luxury. Limited market, mostly forced; large margin, relatively small direct competition.

3. Restrictions of Market
   - (a) Distance to trade.
   - (b) Proportion of trade normally supplied by competitors.
   - (c) Limited production.
   - (d) Limited finances.
4. Sales Cost Factors
   - (a) Selling force.
   - (b) Sales promotion.
   - (c) Advertising.
5. General Considerations
   - (a) Per cent of maximum possible sales enjoyed.
   - (b) Reduction of costs by increasing volume.
   - (c) Increasing frequency of capital turnover.
   - (d) Out-advertising competition.
   - (e) Extent of credit to the trade involved.
   - (f) Trade outlook.
   - (g) Desire to build good-will.
   - (h) Turning sales in a special direction.

The basis of an appropriation must be the sales possibilities of the article.

From such an analysis we determine:

The breadth of the market.
The margin of profit.
The net profit less promotion costs.

At this stage it should be possible to estimate roughly what percentage of the gross receipts per unit of sale is applicable to advertising.

Most advertisers base their appropriations on last year's business; equivalent to grinding with water that has gone over the wheel.

A lean year would allow but a lean appropriation for what may be a big year or vice versa. Even though it may be an estimate only, a safer basis of calculation is next year's sales. Even on pure theory, a system that requires a business to earn its appropriation by the sales of the previous year is illogical because advertising never affects past business, and only part of its efficiency applies to current sales.

All expenditure should be budgeted to the policy or product to be promoted, and not to the class of medium used.

VI

The foregoing analysis represents what may be termed a "combination" analysis of factors within and without the business. At least one authority insists that they may be profitably separated, and that there are two distinct methods in estimating budget costs: one working from the factory to the market, and the other starting from the market and reaching the budget through factory or product.

His outline of the first is substantially as follows, for a campaign involving a great variety of products:

1. Name of Product:
   - (a) Field
   - (b) Uses
   - (c) Buyers
   - (d) Sales and advertising methods
   - (e) Advertising media
2. Where and How Used:
   - (a) For what purpose.
   - (b) Kinds of installations.
   - (c) Relative importance from sales or profit standpoint.
3. Size of Market. For each use give:
   - (a) Number of total possible purchasers.
   - (b) Number of units usable per purchaser.
   - (c) Sales price per unit in average terms.
4. Buying Factors:
   - (a) Who determines purchase.
   - (b) How many influence purchase.
5. Selling Factors:
   - (a) Channels through which sale is made.
   - (b) Importance of each branch or step in distribution.

6. Advertising Media. To reach a given field of use:
   (a) Name of medium.
   (b) Total circulation.
   (c) Total effective circulation.
   (d) Effective circulation per dollar.

This raises the question "What will it cost to present this product through advertising to the whole market?" and this may be high or low in relation to present sales.

The approach on the subject from the plant to the market, the budget being determined for *each product*, is indicated on the following basis:

1. Capacity of plant.
2. Present output and rate of increase.
3. Cost and selling price.
4. Total selling expense allowable.
5. Total sale organization expense and consequent unit advertising expense allowable.
6. Results to be obtained in order to keep unit expense at proper amount.

In all of these plans it is essential that each product be considered individually; and that all expenditures be charged to the proper account.

A study of sales statistics is valuable just to the degree to which these are reliable. It has been demonstrated again and again that the deductions based on the mathematics of probability may be just as sound as those based on the results of last year's effort. Common sense, arithmetic, experience, and theory all contribute value to budget-making.

VII

Budget-making is continuous, but the budget itself should not change beyond the reasonable provisions made for its flexibility. An operating schedule, and a block system of accounting, will keep the program on the track. The department without a budget is a ship without chart and compass.

The accounting problems, aside from the routine methods revolving about putting a real block system of control on the appropriation for the guidance of all concerned, deal with such questions as these:

1. When shall the cost of advertising a single brand or item be charged to that item, and when to the business as a whole?
2. When a piece of copy features more than one item, what, if any, separate distributions of charges shall be made?
3. Shall advertising be charged to current expense, or can a portion be charged properly to good-will, and if so how much?

A good live advertising department can produce lots of real questions, many of them more important than any of the above, calling for some real co-operation between the two departments.

Two things, however, should be definitely required in the plan:

1. An adequate method for the proper and sufficiently detailed distribution of charges.
2. Provision for the setting up, year by year, of an advertising reserve, for emergencies and periods of business depression, either local or general.

The question of the form which the budget shall take in its presentation to the powers that be, is probably settled automatically for the most part by the process of analysis that leads up to it, if we except the minor details which a resourceful advertising executive may frequently inject into the presentation to make more impressive some of the points involved.

Only one weakness needs to be commented on at this point; the common tendency to require that with the plan or program shall be submitted in concrete form the copy, layouts, illustrations, and other means of achieving the advertising result, often the better part of a year in advance of the need.

ADVERTISING APPROPRIATION REPORT
(MONTHLY - CUMULATIVE)

MONTH ______________ SEASON ______________

Distribution	This Month					Season To Date			
	Gross Expenditure	Credits	Net Expenditure	Budget	"Over" or "Under"	Net Expenditure	Budget	"Over" or "Under"	Balance For Season
* Magazine									
* Farm Paper									
* Newspaper									
* Trade Paper									
Miscellaneous									
TOTAL SPACE									
Periodical									
Newspaper									
Miscellaneous									
TOTAL ART WORK									
Periodical									
Newspaper									
Miscellaneous									
TOTAL ENGRAVING									
Catalogues									
Folders									
TOTAL LITERATURE									
Dealer Cuts									
Photographing									
Dealer Helps									
Miscellaneous Printing									
Delivery Charges									
Miscellaneous									
TOTAL SUNDRY									
* Space									
Literature									
Misellaneous									
TOTAL EXPORT									
GRAND TOTAL									
* See detail sheets									

It is said that every man is certain that he can edit a newspaper, run a hotel, and write an advertisement. If there is a germ of truth in this it explains this policy, fairly common, which represents a piece of folly and a fundamental trouble, with many campaigns.

The budget should be the plan of the general staff. It should not be necessary to shoot off a rifle, explode a bomb, and put a regiment through the manual of arms, to get the approval of the general plan of the campaign.

VIII

The physical control of the appropriations—the forms by means of which the advertising executive knows where he stands day by day—are relatively simple. They have been modified in many details for different concerns, but a majority are based on the following:

1. The budget sheet:

   Regardless of the method by which the appropriation has been determined, there is laid out an estimate, roughly distributed month by month, with subtotals at convenient intervals.

2. Detail sheet:

   (a) For space. These sheets show, with as much detail as may seem advisable, the publications, dates of insertion, size of space, and cost. The advertising agency usually works this out in compact form both for its guidance and for approval.

   (b) For sundry costs. These sheets are usually more of a guess than the space sheets, but they cover estimates for literature, printing, engraving, and innumerable incidental costs. They should be binding only as to outside limits.

3. Budget control sheet. (Diagram page 20)

   With this before him and his general budget approved, the manager knows where he stands all the time. If the appropriation or scale of expenditure warrants, this could be made weekly or even daily.

Purchase orders, and methods of payment of bills, follow logically the regular procedure of the accounting department. Two points, however, should be settled in this connection:

1. The accounting department should not charge to advertising any item that has not been specifically approved and proper distribution noted, by the head of the advertising department, and should furnish the latter a monthly statement recapitulating total charges at least.

2. The advertising department should purchase printed matter, paper stock, etc., rather than the purchasing department.

In the above are two sources of trouble which should and can be eliminated. The advertising appropriation is too frequently a "bell-box" into which it is convenient to dump any incidental charges that cannot readily be distributed to their proper places. Items ranging from the cost of tickets to the Firemen's Ball up to the operation of a delivery truck have crept into the advertising budget, to the breach of diplomatic relations and a lot of lost motion.

It is amazing to find the number of concerns who believe in the budget system, and who fail from time to time to observe the business etiquette of the situation.

It is no reflection on the purchasing department, nor an infringement on their prerogatives, to say that experience has demonstrated the wisdom of the second ruling above. In the majority of instances, it requires only a brief experience to have the purchasing department voluntarily ask to be relieved of the job. The strict advocates of the water-tight compartment theory

of functional organization may not agree, but in practical operation nothing further is needed than that confirming orders go through the purchasing division for recording and accounting purposes.

The tendency is to make the advertising program too flexible. No one pretends to tell the purchasing agent in December, or earlier, what he shall spend the following July, whereas the advertising department schedules are frequently like the laws of the Medes and the Persians. While it is true that the opportunities for strategy, the need for it, and the market fluctuations which enter into the work of the purchasing department are not so many nor so frequent in the case of the advertising manager, they nevertheless exist; and management has created a source of waste and inefficiency by limiting too severely the variations of the advertising program as sales and market conditions demand, or as opportunities for quick and shrewd buying are presented.

Nor is this to be in any sense interpreted as being a criticism of the wisdom of having a budget drawn well in advance. On the contrary, a period of from three to five years is not too long over which to have a well-defined, even if not detailed, plan.

It is usually such a struggle to get the details of an advertising appropriation finally approved that the advertising manager can hardly be blamed if he is reluctant to reopen the question even when good strategy makes it advisable.

IX

It would be comic if it were not tragic to hear the inside story of the way in which many an advertising program is finally put into form, and it is worse to realize that such conditions do not obtain with the other major programs of the business.

Management may well consider the advantages of adopting a much more sympathetic and flexible attitude toward the operations of the advertising department, and not expect of the head of it the superlative degree of personal salesmanship and diplomacy which are now frequently needed to get results.

An appropriation need not pass from the supervision of management simply because it is not rigidly limited. It can and should be supervised. But it should be a flexible program within the gross amount, and it ought to be possible to reopen the matter readily—as it frequently is not—if conditions dictate the consideration of an increase in the total.

Appropriations should be cumulative. A sum appropriated for a month or for a medium or a product, and not spent when scheduled, should not be pouched by the accounting department as a "saving," but should be carried as a credit balance to the advertising department to the succeeding months or from one year to the next. To fail to do so is to remove one of the greatest incentives and one of the strongest weapons in helping the advertising executive to produce results.

COMMERCIAL RESEARCH

BY R. C. HAY*

AN interesting business development is the commercial research work carried out by many well-known business houses. The aim of such research is to present to the managing executives the facts of the business. While the practical results obtained from this new type of business analysis are numerous few organizations so far have been able to utilize research in any way except for the study of purely technical processes. Yet such work is not limited in its scope to any one field of endeavor. It is applicable alike to the business of the retailer, the wholesaler, the manufacturer, and to all departments in those businesses. Service organizations such as advertising agencies and publishers, quickly become ardent believers in possibilities of commercial research.

Two principles govern the handling of the research work. Much trouble would be saved if they were invariably followed. These principles are:

1. Before the work begins executives should determine exactly what is to be done with the information after it has been collected.
2. To work out a plan with a definite conception of the method of compiling, tabulating, and analyzing the information. In this way the various aspects of the problem will be clear and the plan of research will be in keeping with the requirements of the business.

It often happens that as the analysis of a business problem progresses, the original objective becomes confused in a maze of new *objectives* which come to view in the light of the information collected in the progress of the study. However, in the majority of cases the study can be outlined in advance in sufficient detail to give a definite conception of the use which is to be made of the facts after they have been collected. Figures and facts, of a report may be "interesting," but unless the report is of practical value and can be applied to the business for which the analysis has been made, the research is of no value.

To the analysis and solution of his problems every successful executive applies the principles of commercial research. At all times, business men are accumulating data and information on which plans and policies are based and from which new methods evolve. Commercial research is the acknowledgment of the existence of this function in business.

Many advertising agents and publishing houses have built their business to a considerable extent on the results of well-planned commercial research carried out in a businesslike fashion, and have applied this method to their day-to-day problems, through the analysis of markets, trade factors, methods of distribution, and a whole host of similar problems having to do with the distribution of merchandise. Within the last few years many industrial and other business organizations, among which are numbered such well-known concerns as the Curtis Publishing Company, Swift and Company, the Winchester Repeating Arms Company and others of like standing, have created commercial research departments which have played a vital part in the concern's development.

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The work of a commercial research department divides itself into two distinct fields, office work and field work. The office work is usually carried out in the home office of the company, and includes the clerical and other office service, the classification and tabulation of the detailed information, and the maintenance and care of the library and data files.

The field work requires executives of a higher type than the clerical workers in the office. The field men must interview people in their contact with outside organizations; they prepare the final reports on the problem under analysis; and they sometimes assist in the application of the report to the business. The office organization develops the available data and turns this over to the field men who collect new data and co-relate this with previously existing data, all of which is included in the final report prepared for the management.

The normal organization of a commercial research department consists of the following executives and assistants:

1. Manager of the department
2. Field assistants
3. Office manager
4. Office assistants
5. Librarian and assistants

The manager is responsible for the development of the work and its coordination with the other departments of the business. The field assistants should each specialize on some particular phase of the business. In, for example, a sales research department the assistants might specialize on the following subjects:

Markets
Competition
Sales department, routine and control, etc.

The office manager is responsible for office details, and is entrusted with the tabulation, analysis, and preparation of data for use in the work in the field and in the final reports.

The librarian looks after the development of the library, the data and correspondence files, and the filing of records, and assists the office manager in summarizing existing data as the basis for field work.

To carry on the routine work of the office and the field force smoothly and along lines which have been demonstrated to be practical it is necessary to draw up a standard practice manual. Such a manual describes the manner in which the organization and the work are to be handled. It should include copies of such memoranda and other letters as are necessary to show the basis or origin of the department, the company rules which govern that department, the relation of the research department to the rest of the organization, and any other information required by the employees of the research department to understand the purpose and nature of their work.

The standard practice manual, in addition to the general data outlined above, specifically outlines the method of handling the research work, the preparation of reports, and other details. These outlines are developed after careful thought and adopted as standards, because they seem to be the best method of handling the function that is being considered.

As part of the standard practice manual, there should be included outlines of the methods which are to be followed in taking up assigned problems. These are given for the training and development of new research workers as well as for the guidance of the experienced workers. As an example of a working outline take the following, which lists the initial steps to be followed prior to undertaking a new research problem:

1. Secure a proper definition of the problem so that its elements may be properly outlined and that there may be no confusion as to the question which is to be considered. Some indication should be secured of the amount of time which is to be allowed for the subject and how much detail is to be covered.

2. What do you expect to do with the report after you get it?

3. Before starting the detailed analysis of any business problem, the method of attack or approach should be carefully planned. All possible phases of the problem should be considered, in order that the method adopted may adequately cover the needs of the study.

4. The preliminary plans and methods for attacking the problem should be carefully checked with outside sources to avoid loss of time and money and to avoid possible loss of confidence on the part of other executives through false starts.

An important phase of the work is the development of an adequate library. Though public libraries and data files may be utilized in gathering information the fullest information should be available in the files of the company library, as to the location and content of these outside files to which access may be had. This record of outside information is an important part of the library work. It is as desirable to know *where* to get data and information as it is to actually have the data in the files.

A suggested list is given below of the sources of information available for a sales research division.

I. Contacts within company organization
1. Sales department
   (a) Publicity division
   (b) Main office sales organization
   (c) Branch office sales organization
2. Financial department
   (a) Sales statistics section
   (b) Cost section
3. Manufacturing department
4. Purchasing department
5. General manager's office

II. Outside contacts and sources of information
1. Special trade associations
2. General business associations and organizations
3. Trade publications
4. General publications
5. Jobbers and wholesalers
6. Retailers
7. Consumers
8. Schools and colleges
9. Individuals

To illustrate the practical application of research to business, there are outlined below some of the factors in the work of a sales research department.

In the first place, the sales research organization prepares information, which, together with the reports and data already existing serves as the basis for the sales plan. The sales plan in turn vitally affects the program of the manufacturing, purchasing, and finance departments. Basing the sales plans more on analysis of market facts and less on past records or hearsay has proved to be prolific of results. Essentially, therefore, the work of the sales research organization is that of furnishing facts and suggested plans to the sales manager for his consideration and use as his judgment may indicate.

Two matters which are often the subject of research are "markets" and "competition." As an indication of the subjects which would be covered in analyses of markets, the following outline is given:

1. Amount, location, and character of demand.

2. Methods of distribution followed in supplying demand.

3. Merchandising requirements of the market.

4. Factors influencing demand and the market. (Economic factors, financial factors, style factors, fluctuating demand factors.)

5. Comparison of total company sales

to total market demand by products and by territories.

6. Comparison of company business with that done by competitors in territorial distribution.

7. Development of the sales plan and sales quotas by territories and by products to take advantage of conditions shown by the market analysis.

8. Analysis of selling costs.

In analyzing such a subject as competition, the following points would be covered:

1. Names, location, and character of competing manufacturers.

2. Comparison of types, costs, and selling prices of competitors' products with corresponding company products.

3. Sales of competitors.

4. Methods of distribution followed by competitors.

5. Competitors' sales organization, sales policies, and sales methods.

6. Competitive advertising, trade-marks, trade-names, etc.

7. Service offered by competitors to customers.

8. Factors affecting production:

(a) Raw material supply and cost
(b) Transportation factors
(c) Labor condition
(d) Financial factors
(e) Comparison of competitors' advantages and disadvantages with regard to these factors

Commercial research work requires men of particular abilities with a thorough grounding in business fundamentals, a well-developed sense of business judgment, and a keenly analytical turn of mind. This type of executive commands a relatively high wage, but properly handled these men can be of great value to a business. However, in this respect research work is not a class by itself, since practically every other department of business activity requires special talent for its successful development.

ANALYSIS OF LABOR TURNOVER

BY GORDON S. WATKINS*

WHILE labor turnover is an old phenomenon in industrial life, recognition of the seriousness of the problem of labor turnover is of comparatively recent origin. As a problem it has attracted wide attention in the United States and Europe only since about 1913. These facts account for the controversy that prevails concerning its exact nature and the definition of terms. The term "labor turnover" has been used loosely in reference to general labor instability, but more strict usage confines it to the extent of shift and replacement among the employees of a given establishment made necessary for the maintenance of the working force. To the general phenomenon of the movement or flow of industrial workers into and out of industrial establishments the term "labor mobility" is given. The term "labor turnover," then, refers to the number of replacements in a particular plant in a given period.

From what has been suggested regarding the nature of labor turnover, it is apparent that, if the normal requirement of a given establishment is 500 workers for a certain year and at the end of the year it is found that 500 additional laborers have been employed to maintain the necessary original labor force, the labor turnover in that plant is 100 per cent per annum. That is, to maintain a labor force of 500 workers 1,000 had been employed.

The extent of labor turnover in American industries cannot be stated exactly, since statistical data for the country as a whole are not available. Several special studies have been made, however, which indicate the magnitude and seriousness of the problem to the employers, the employees, and the community. The earliest attempt to approach the problem scientifically in the United States was made by Magnus W. Alexander. Mr. Alexander made an investigation of employment records in 12 metal manufacturing plants in 6 states. His results aroused widespread interest in a hitherto neglected phase of industrial administration, namely, the scientific handling of employees. It was discovered that this group of 12 establishments, which employed 37,274 workmen at the beginning of the year found it necessary during the year to employ 43,571 persons. The net increase in the working force to care for expanded operations was 6,697 employees. At the same time 35,874 workers had dropped out of the service of these plants, which gives us the number of replacements for the year. The labor turnover was 82 per cent. Six and one-third times as many people as constituted the permanent addition to the force had to be engaged during the year. From October, 1912, to October, 1913, the Ford Motor Company hired 54,000 men to keep up an average working force of 13,000, which represented a labor turnover of over 400 per cent. The labor turnover in fifty-seven Detroit plants in 1917 averaged 252 per cent. In 1911 a large Philadelphia plant reported a labor turnover of 100 per cent, and in 1912 the Plimpton Press had a turnover of 186 per cent.

More recent investigations indicate

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that the problem of labor turnover is even more serious than earlier studies suggest. A study of labor mobility among crews of vessels on the Great Lakes for the season of 1917 showed that on bulk-freight steamers an average labor turnover of 380 per cent was not unusual, while on timber steamers and passenger-freight steamers the average was 243.8 and 818.5 per cent, respectively. The labor turnover for particular occupations manifests an even worse situation, the turnover being anywhere from 400 per cent to 1,266.7 per cent for firemen, from 562.5 to 1,787.5 per cent for coal passers, etc. A study of labor turnover in the Middle West in 1918 showed an annual turnover of 300 to 499 per cent or more. Nor is the problem confined to any one section of the country. An examination of the employment records of 12 California establishments during the year ending June 1, 1918, showed that to keep filled continuously 14,083 full-time positions these firms had to hire 32,489 persons, most of whom were needed to replace the 31,647 employees who were separated from the service of these companies during that year. This meant an annual labor turnover for the aggregate labor forces of this group of 224 per cent. The rates of turnover ranged from 65 per cent in the main office of a public utility corporation to 434 per cent in a plant engaged in the manufacture of explosives. In two oil refineries of California the labor turnover for 1918 was 233 per cent and 296 per cent, respectively. In one of these plants 1,141 men had to be hired in order to keep 420 positions filled, most of whom were needed to replace the 980 employees who were separated from the company's service, while in the other plant 3,076 men had to be hired to keep filled the 965 jobs in the plant, most of whom were employed to take the place of the 2,855 men who left the service of the corporation. Out of 25 establishments studied in Chicago for the year ending June, 1918, none had an annual turnover of less than 50 per cent, one-fifth had a turnover of 50 and under 100 per cent, two-fifths had a turnover of 100 and under 200 per cent, and the remaining two-fifths a turnover of 200 per cent and over.

Fortunately, the results of recent investigations of a more comprehensive character are now available. In a wide range of enterprises studied during the period 1910 to 1919 statistics indicate that the accomplishment of 6,363,046,000 hours of work, which is labor time equivalent to that of 2,117,682 full-year (3,000 hours) workers, entailed 2,564,037 accessions and 2,481,280 separations, or a total of 5,045,317 labor changes. In other words, on the average for each year of the decade there were 256,404 accessions and 248,128 separations, or a total of 504,532 labor changes, involved in the maintenance and necessary enlargement or curtailment of a labor force of 211,768 workmen. This is as if during one year all the employees had left their jobs and a complete new set of laborers had taken their places. Each year, on the average, the number of persons who quit, who were laid off, or were discharged, as well as those who had to be hired, was much larger than the total number of workers on the force at any one time.

Even for 1915, the most stable year of the decade, in the 51 establishments reporting, there were 122,211 accessions and 99,734 separations entailed in the maintenance and enlargement of a work force of 159,054 employees. This is equivalent to a complete overturn of nearly 75 per cent of the working force during the year. In 1917–1918, the most unstable year of the

decade, 631,173 accessions and 613,467 separations, or a total of 1,244,640 labor changes were involved in the maintenance and enlargement of a work force of 305,900 workers. This is equivalent to more than two complete turnovers of the work force during the year, in the 176 establishments reporting.

To get a clear idea of the relative responsibility of the various factors that enter into the phenomenon of labor mobility it is necessary to consider the types of separations, which may be classified as *quits*, *discharges*, and *lay-offs*. Statistical information of labor turnover in 19 establishments in Milwaukee, Wisconsin, for one year, is suggestive as to the nature of separations. These data are as follows:

Nature of Separations	Number of Employees	Per Cent
Discharged	3,042	8
Laid off	863	2
Entered military service	2,323	6
Quit	30,788	84
Total	37,016	100

The significant fact about these statistics is that the great bulk of all separations is due to voluntary leaving. Generally speaking, the discharge rate is subject to less extreme fluctuations than the lay-off rate, constituting from year to year a more constant proportion of total separations. The stimulating effect of periods of industrial prosperity upon the rate of voluntary withdrawals is manifest from the abnormally high rates of total separations in such periods, in spite of the counteracting low rate of lay-offs. In periods of industrial depression both the rate and the proportion of lay-offs and discharges are larger than in periods of industrial prosperity. This is due, of course, to the fact that when depression sets in, large numbers of employees are laid off and workers are discharged more freely than in a time of business prosperity.

As might be expected, unskilled workers manifest greater instability than skilled laborers, and tend to register a higher rate of turnover. Some investigations have shown that the degree of occupational training and skill possessed by the employees appears to make little or no difference in the proportion of quits, discharges, and lay-offs in the total separation rate. For example, returns from 22 establishments reporting mobility statistics for skilled and unskilled employees separately indicate, that 76 per cent of all skilled and 72 per cent of all unskilled employees who left, quit voluntarily; that 15 per cent of the skilled and 19 per cent of the unskilled were discharged; and that 10 per cent of the skilled and 9 per cent of the unskilled were laid off. The actual rate of separation in this instance, however, showed a different situation, the data indicating conclusively that the rates of lay-off, discharge, and quitting are

each higher for the unskilled than for the skilled workers; the total separation rates being 2.2 for skilled and 4.7 for unskilled workers. About the same relation is shown between skilled and unskilled for each of the three types of separation, which indicates that skilled laborers are about twice as stable as semiskilled and unskilled. Another investigation, covering 21 establishments, showed that the rate of labor turnover was higher for unskilled than for skilled workers.

There are definite reasons for this disparity between skilled and unskilled workers in relation to the rate of turnover. The difference may be generally ascribed to the higher wages of skilled labor and to the fact that they are a more settled and more intelligent class of workers, not given so generally to migration, but rather looking for advancement in their own particular line of work. It should be noted, however, that other factors besides intelligence enter into the situation. Skilled workers are usually organized more effectively than unskilled workers, a fact which makes it easier for them to secure more favorable conditions of employment. Skilled laborers have usually been the first to obtain higher wages, shorter hours, and improved conditions of labor. The relative scarcity of skilled labor is, of course, the responsible factor in this regard. Common, unskilled labor is not usually difficult to replace, while skilled labor, especially in the United States, is not easy to secure. Little wonder, then, that the rate of discharge in the case of unskilled workers is so much higher than in the case of trained workers. In periods of business and industrial prosperity, when even unskilled labor becomes relatively scarce, employers must take what they can get, and careful selection is hardly practicable. Consequently, the unskilled labor force is recruited from the class of workers known as "migrants" or "floaters" who, as the terms suggest, do not remain long at any one job.

Unfortunately, many of the most reliable studies of labor turnover throw very little light upon the relative stability of male and female labor. Much of the information available in this regard was gathered during the abnormal period of the World War when the rate of turnover for men was inevitably higher than for women, because of military service and the excessive substitution of female for male workers. For example, in one study the separation rate per 1,000 full-year workers in a certain plant was 2,284. The rate for males was 2,445, and for females 630, indicating a rate for the former four times as great as for the latter. In another investigation 5 out of 8 establishments showed a higher rate of turnover for males than for females, while in 3 establishments the rate for males was somewhat lower. There is every reason to believe that even in normal times female labor is more stable than male labor.

It has been demonstrated conclusively that labor turnover entails an enormous economic waste. Labor turnover not only conduces to economic inefficiency and social degeneration, but these in turn conduce to labor turnover, thus constituting a vicious circle from which it is difficult to escape. Excessive frequency of migration on the part of the workers, whether it be from one locality to another or from one job to another, furnishes no real benefit or gain to the majority of laborers and is expensive both for the employer and for the nation. From a financial standpoint, the employer's additional costs due to labor turnover may be summarized as given in the following:

1. The clerical cost incident to hiring and firing.
2. The cost involved in the instruction of the new employees by foremen and assistants.
3. Increased breakage and wear and tear of machinery and equipment by new workers.
4. Reduced rate of production that is an inevitable result of employing new workers, such a reduction appearing in the early period of employment.
5. Increased quantity of spoiled work by new employees.

The cost of labor turnover per man will vary with the amount of previous training, the degree of skill, and the natural aptitude and adaptability of the worker. In this regard the workers have been classified as follows:

Class A, comprised of highly skilled mechanics who have spent years in acquiring their present proficiency;
Class B, including mechanics of lesser skill, who secured their training in a year or two;
Class C, consisting of operatives who, without previous experience. can acquire a fair degree of efficiency within a few months;
Class D, comprising unskilled laborers who have practically no training;
Class E, the clerical force.

The estimated cost per person for training new employees of these respective classes is: A, $48; B, $58.50; C, $73.50; D, $8.50; E, $29. Some employment managers estimate the cost at an average of $30 per man, while others put it anywhere from $50 to $200 per employee. Most estimates range from $50 to $100 for each new employee that must be "broken in." In an investigation of labor turnover in 12 plants the annual unnecessary expense of engaging 22,031 employees in one year was stated to be from $831,030 to $1,000,000. The annual expense to the Ford Motor Company on account of the 400 per cent or more of labor turnover, already referred to, was over $2,000,000. At an average cost of $40 per employee the total annual expense of labor turnover in 20 firms whose employment records were examined would be $1,760,000, an average of $88,000 per firm. A conservative estimate puts the cost of labor turnover for the United States as a whole at from $100,000,000 to $200,000,000 annually.

In common with other phenomena that appear in social and industrial life, labor turnover is ascribable to certain more or less definitely ascertainable causes. Thus far there seems to have been made no general attempt to classify systematically the wide range of conditions responsible for excessive mobility of the laboring force in American industries. Even in very recent investigations analytical treatment of causes has been neglected and the emphasis placed on the extent of labor turnover, with especial consideration of the nature of separations. The nature of separations, voluntary withdrawal, discharge, lay-off, has sometimes been treated as the cause of labor turnover. This is, of course, an unwarranted confusion of the character of the elements in labor mobility with those far more fundamental conditions that produce the phenomenon itself. Voluntary withdrawals or quits, discharges, and lay-offs indicate the nature of separations from the service of the plant in a given period, but tell nothing of the conditions that produce labor mobility.

The causes of labor turnover, as of labor mobility in general, may be classified in three major groups, as follows:

1. Personal Causes; which are reflected in the characteristics and temperament of the individual employee, and thus have their origin within the individual. They are subject to further division:

(a) physiological elements

(b) psychological elements
(c) economic elements

2. Industrial Causes

3. Social Causes

1. The physical characteristics of the individual employee are always a factor in labor mobility and labor turnover. A certain quantity of labor turnover is inevitable; a certain amount of separation from employment is unavoidable. Death of employees, brief or prolonged periods of illness, voluntary withdrawals, and necessary discharge will continue as practically uncontrollable factors in separation from service. Employees will continue to seek more congenial climate and industrial conditions so long as old conditions conduce to ill health. Only a perfect physical constitution on the part of every worker could preclude labor turnover due to the physiological factor here referred to. The psychic elements include the temperamental aspects of the individual employee. Many workers are by virtue of temperament migratory and restless, possessing an insatiable wanderlust. These "migrants" or "casuals" make up the army of workers who reap our harvests in the summer and fall, cut our ice and lumber in the winter, and make possible much of our construction work in the spring and summer. The restless temperament of sea-going employees is a large factor in the excessive labor turnover on steamships.

These psychic elements have a peculiar significance in the determination of excessive labor turnover among juvenile employees. Temperamentally, children are restless. Youth is usually optimistic, confident, and indifferent to the consequences, economic and social, that may develop out of excessive labor mobility. A change of jobs is looked upon as a thing good in itself, strikes are welcomed as a means of furnishing excitement and a chance to loaf or play, and the least margin of higher wages elsewhere is sufficient provocation for a "move". Regular employment is viewed as monotonous. The Board of Education of Rochester, New York, discovered that boys between the ages of 14 and 16 changed employment on the average of every seventeen weeks, which indicates a turnover of 300 per cent. The employment records of Swift and Company of Chicago showed that the average term of employment for a boy in the service of that company was only $3\frac{1}{2}$ months, indicating a labor turnover of 342 per cent. Statistics from Indianapolis, Indiana, indicate that of 6,710 positions held by children on leaving school, 7 per cent were for less time than 2 weeks; 15 per cent for less than a month; 30 per cent for less than 2 months; and 48 per cent, or almost one-half for less than 3 months.

The economic elements that enter into the personal causes of labor turnover may be summed up in the phrase "the desire for gain." Laborers, like capitalists, landlords, and business enterprisers, are constantly seeking the level of maximum returns on the investment. The investment of the worker is his labor, and he will naturally endeavor to command the highest available price for the commodity which he has to sell—his labor. This explains why voluntary quits constitute usually the major proportion of separations from service. Moreover, this desire for gain, this economic consideration of a larger wage, will probably continue as a potent factor in labor turnover. It is difficult to imagine a practicable economic system under which this motive for gain would cease to function.

2. Industrial causes of labor turnover consist of those conditions in industry and those aspects of industrial

administration that conduce to instability of the working force. Whereas personal causes have their origin primarily in physical and psychical characteristics of the individual employee, industrial causes are ascribable to certain deficiencies in the organization and operation of industry itself. Labor turnover is only one of a large variety of industrial problems that are symptomatic of a serious breakdown in the structural and functional aspects of modern industrial and business life. The industrial causes of labor turnover may be classified as follows:

(a) Deficiencies in industrial administration. Under these deficiencies may be enumerated:

(1) Inefficient employment policies.
(2) Lack of proper incentives.
(3) Autocratic superintendence.
(4) Personal prejudice and favoritism.
(5) Unstabilized production.

(b) Undesirable labor standards. These include:

(1) Inadequate wages.
(2) Excessive hours of work.
(3) Undesirable conditions of employment.

(c) External industrial maladjustments. Whereas the industrial causes already mentioned have reference to internal deficiencies in plant management and operation, this third group of causes is attributable to general economic conditions and industrial policies external to any particular establishment that may be considered. External conditions include such factors as (a) general industrial depression or prosperity; and (b) inequality of wage scales.

The nature of the various elements that enter into the industrial causes is almost self-evident. It will be readily seen that inefficient employment policies refer to the very unscientific, haphazard methods of hiring and firing that have prevailed in industry. The business of hiring and firing has hitherto been placed under the jurisdiction of the foremen who, although they possess a knowledge of technical processes, have not been competent in the art of handling human nature. Employment departments and employment managers are recent additions in most industries. The absence of proper incentives refers to poor methods of advance and promotion, and the failure to compensate efficient employees. By autocratic superintendence is meant the all too common assumption and exercise of despotic power on the part of superintendents, foremen, and other officials. Spontaneous firing of employees results from the uncontrolled expression of autocratic temperaments of these officials, and high rate of labor turnover is inevitable. Foremen are quite likely to have personal likes and dislikes and religious or racial prejudices which often result in the promotion of inefficient over efficient workers, or the hasty discharge of deserving employees. Unstabilized production grows out of the failure of the concern to regulate its production by distributing its orders properly. Such regulation and stabilization of production has been accomplished by encouraging the trade to place orders more evenly throughout the year. Insufficient wages, excessive hours, and poor conditions of employment, such as the lack of toilet facilities, improper ventilation, the absence of restrooms and lunch rooms, etc., drive away rather than attract employees. In periods of industrial prosperity employment is abundant and employers compete with each other for labor with the result that there is a marked inequality in wage scales that stimulates labor mobility. In periods of industrial and business depression there is a wholesale laying-off of men, as a rule, which results in a high rate of labor turnover.

3. Social causes of labor turnover have reference to the inadequacies of

what may be termed the social environment of industry and business. These inadequacies consist of:

(a) The lack of proper transportational facilities, such as street car service to and from work.
(b) The absence of sufficient means of communication, such as telephones and newspapers.
(c) Inadequate housing facilities.
(d) The absence of recreational and social opportunities such as parks, dance-halls, libraries, etc.

These causes are social in the sense that they develop out of community conditions rather than from conditions over which the employer has full control. Employers who have recognized the necessary relation between these conditions and labor turnover have begun to provide such facilities either by themselves or with the co-operation of the community.

The studies of labor turnover that have appeared thus far have approached the problem mainly, if not entirely, as a problem in which the individual employer alone is interested. It is granted that it is a problem which concerns chiefly the employer, and that whatever remedies may be forthcoming will have to come mainly from the employing group, but this does not mean necessarily that the problem has no social aspects. Earlier it was suggested that labor turnover is an economic waste and conduces to social degeneration; that labor mobility breeds economic and social inefficiency, and that this in turn breeds labor mobility, thus forming a vicious circle that has deleterious economic and social consequences from which society must seek to escape. If labor turnover tends, as it inevitably must, to cause dependency and social delinquency, society is vitally interested in the eradication of the complex causes that produce so serious a problem. Excessive labor mobility in its various aspects undoubtedly encourages idleness; idleness is reflected in economic insufficiency, which in turn forces the subject to rely upon charitable sources of maintenance, or leads him to adopt unsocial, delinquent methods of support. As the problem of labor turnover is more and more generally recognized and more completely understood its social aspects will stand out more prominently. It is a problem in which not only the individual employer, but the individual employee and the community is seriously concerned. The social cost of such a problem cannot be measured in monetary values.

There is quite a unanimity of opinion among interested employers, employment managers, and students of labor turnover as to what constitute the most effective measures for reducing this economic and social waste, and that while it may not be possible under our present methods of production and distribution to eliminate labor turnover, much can be done to prevent the most deleterious aspects of it. The suggestions that have been advanced for the reduction of this waste in our economic and social life include, among others, the following:

1. The establishment of a centralized and specialized employment department to assume control of hiring, handling, and firing of employees. This would necessitate restriction of the powers of employment and discharge now exercised by foremen and the converting of the foremen's power to discharge into the privilege of recommendation. The organization of a centralized employment department under the direction of a competent employment manager would doubtless have many advantages. Employment statistics could be collected and an analysis made to ascertain the causes of voluntary withdrawals, discharges, and lay-offs, the cost of labor turnover for the plant, and possible methods of improvement.

2. A proper system of apprenticeship and methods of promotion, affording an incentive to greater efficiency.

3. A more careful selection of employees and better adaptation of the man to the job. Mental tests or other means of ascertaining the worker's capacity have been mentioned in this connection; this would tend to insure a better selection of suitable types of workers for specific jobs.

4. Improved labor standards, including higher wages, shorter hours, and better conditions of employment.

5. Special inducements for continuous service, such as schemes for profit-sharing, bonuses, and other forms of special compensation.

6. Improvement in living and housing conditions.

7. Regulation of production, which implies more uniform employment of workers throughout the year.

8. Establishment of amicable relations between the heads of departments and their employees.

9. Organization of a plant committee, composed of representatives of employers and employees, whose duty it shall be to hear and adjust grievances and complaints of workers whose discharge has been recommended by foremen or heads of departments.

10. Establishment of a personnel department, the function of which shall be to take care of the human element in industry, including such activities as the provision and supervision of educational, social, and recreational facilities and opportunities.

Constructive labor policies such as these have stabilized the labor forces in many establishments, with immeasurable benefits to the corporation, the worker, and the community. The Saxon Motor Company, during the first year of operation of its employment department, reduced its labor turnover 140 per cent. From October, 1912, to October, 1913, the Ford Motor Company hired 54,000 men to keep an average working force of 13,000. As already stated, this was over 400 per cent turnover. From October, 1913, to October, 1914, this company hired only 7,000 men to keep an average of 17,000. If we eliminate the 4,000 who were added to build up the permanent working force, this means that only 3,000 men were hired to keep up the same force of 13,000 men. This was only 23 per cent turnover. Nine months of profit sharing was said to account for this successful reduction of wasteful mobility of labor. This represented a saving to the company of at least $2,040,000, a return of 24 per cent on a profit-sharing bonus, which was intended as an outright gift. The German American Button Company at Rochester, New York, reduced its labor turnover 40 per cent, and the Cleveland Foundry Company reduced its turnover from 240 per cent to 125 per cent in a little over two years. Swift and Company recently spent over $150,000 in putting its 5,000 foremen through a course of training designed primarily to teach them how to handle their men properly.

These experiences could be duplicated by a vast number of American companies that have a definite, constructive labor policy, adequate, centralized employment machinery, and systematic and continuous employment records. Such achievements suggest the desirability and the imperative need of introducing sensible, scientific, and humanitarian employment policies to eliminate from our industrial life the evil and the waste of excessive labor mobility. Both in a period of price recession with its general industrial depression, like the present, and in a period of unprecedented prosperity, such as the period of the recent war, the reduction of labor turnover is a sound business policy. Concerns with a constructive labor policy are even now bending every effort to stabilize the labor force and conserve it for the inevitable return of increased production.

THE ECONOMICS OF WAGE REDUCTIONS

BY ORDWAY TEAD*

IT is a not uncommon remark that employers are taking advantage of the state of depression and unemployment to force wage reductions. It is an ill-advised comment, calculated to cause bad feeling and indicates a want of understanding of the actual requirements of the situation. The fact is that depression and unemployment exist because the industrial situation is out of balance, and there is no remedy except by such readjustment of wages and prices as will restore the balance and enable the various industries to exchange products on a fair basis. It is impossible when one-half the people of the country have lost approximately one-half their purchasing power for the other half of the people to go on without taking note of it. The depreciation of money which resulted from the war was not a natural or permanent development. Nothing of the kind has ever happened without a readjustment afterward, and it is always the case that the sooner that adjustment is accomplished, so normal relations are restored between the industries, the better for everybody.

It is of no advantage to the workers in any industry to have costs maintained upon a level which prevents the sale of their products. Somebody must have the sagacity to attempt a restoration of the conditions under which an exchange of products is possible. The compensation of workers in the various branches of industry—which means their purchasing power—must be brought back into equilibrium. Whether it will take a long time or only a short time depends upon the rapidity with which the public comprehends the situation, and remarks of the kind referred to do not promote an understanding.[1]

The curtailment in production and consequently in employment during the last 6 months arose in part at least out of the reluctance of consumers to pay what they felt to be excessive prices. The resulting buyers' strike created a large amount of unemployment which, of course, further reduced the community's purchasing power and delayed the resumption of an effective demand, although to an unforeseen degree purchasing power was sustained by the use of savings accumulated in the peak wage period. This strike was indeed as much a protest arising out of a sense that "profiteering" prevailed, as it was due to inability to pay the price; so that at the present moment, although savings are reduced, goods are worn out and consumers would like to buy. But the condition of a resumed domestic demand is confidence on the part of the purchasing public that prices are as low as they will go at present. The question therefore is: What are the terms on which public confidence and effective purchasing power will manifest themselves? How can demand be stimulated into activity?

The current widespread controversy over wage reductions has to be understood in relation to this problem. For the attitude reflected in the National City Bank's April letter is a growing one. Lower prices are widely recognized as a major condition of industrial revival. How they are to be obtained, is the great question.

Already most manufacturers and dealers have realized that falling prices required drastic readjustments of inventories, and they have greatly reduced their surplus accounts by writing off as loss the difference be-

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[1] *Monthly Letter* of the National City Bank of New York, April, 1921.

tween their purchase price and present prices of materials and finished goods. The rate of profit-taking, however, in the last three years has in most lines been higher than in the pre-war years; and it is doubtful whether manufacturers and dealers have generally made up their minds to a return to the pre-war level. This is unquestionably one source of inflated price as yet not sufficiently emphasized.

Economies in management due to scientific planning and handling of work in process and full utilization of equipment and labor could help to reduce overhead costs; but to introduce these economies requires a high degree of managerial intelligence and an assured demand on the basis of which equipment can safely be put to maximum use. Neither of these conditions can be assumed to exist generally today.

The other significant source of economy is reduced labor costs. Labor costs are of course not the same as wages. If a man gets a dollar an hour and produces 10 units, the labor cost per unit is 10 cents. If he gets the same rate of pay, works harder and produces 20 units the labor cost per unit is 5 cents. If his wage-rate is cut to 75 cents—a 25 per cent reduction—and he still continues to produce 20 units, the labor cost is only 3¾ cents per unit. Employers usually assume that reduced wage·rates mean lowered costs. If production keeps constant as wages fall this will be true. If, however, the workers become discouraged or feel that they are unfairly treated production is likely to fall with wages, which keeps labor costs the same. A partial offset to this which is effective in the present situation, is, the individual worker's fear of discharge which works as a stimulus to keep up his old speed of work.

So much for the theory. The fact is that wages have been reduced in many lines of industry from 5 to 25 per cent. Attention has not directly been paid in this process to assuring that labor costs are simultaneously brought down. Indeed, the constructive and direct ways of reducing labor costs are not widely understood or utilized by employers. Perhaps the single most efficacious method—the adoption jointly of production standards in relation to rates of pay—is little appreciated. Yet this might mean that wage contracts would be accompanied by understandings about amounts of output, and thus a more scientific relation between work and pay would be established and maintained. It has even been claimed with some plausibility that the removal of all "holding back" of labor would of itself so reduce costs that present wage levels might be maintained. It can also be asserted with reasonable accuracy that while wage reductions have, up to the present, made possible some diminution of labor costs, these have been by no means proportionate to wage reductions, and they have not yet been fully passed on to the consumers. And in those rare cases where the wage reduction has been simultaneous with an actual increase in production, the immediate advantage has accrued largely to the employer unless his price cutting has been appreciable. In short, wage reductions to date have not resulted in such sizable reductions in retail prices as is ultimately to be hoped from them.

The situation as above characterized is modified in those industries where collective bargaining prevails on a wide scale. In railroading, coal mining, the building and printing trades, the natural working out of economic forces is held in check by the deliberate intention of the organized workers to maintain their present wage scale. If this

position can be successfully maintained it means that these industries must seek the basis of reduced costs and prices in other retrenchments, or must, when all other reductions have been made, proceed on a permanently higher price level. That this is not necessarily a socially or economically inexpedient policy should be better appreciated. For there are as already pointed out other sources of large economies than lowered wages in all of the industries named. Labor costs alone could be reduced greatly by the use of intelligent methods of securing better morale, by assurances of more regular employment and by jointly set production standards. But the assumption of the workers in these industries, that they are entitled to retain a wage scale, if they can, which begins to approximate a decent American standard of living, is a wholly legitimate assumption; just as legitimate as it is for the professional and employing classes to say that come what may their standard of living is not to be impaired. Appeals to these manual workers on grounds of equality of sacrifice are therefore not likely to arouse a great response. In the struggle to raise the level of consumption of the whole community, which is one consequence of our increasingly productive industrial equipment, a class or group which does, by legitimate co-operative effort, hold and advance its relative economic position, may be loosely accused of doing so "at the expense of the rest of the community." But the fact is that if that group had not so asserted itself, some other group would necessarily appropriate any unabsorbed margin. For in any given year the national income is a fixed amount which is divided in consequence of the interplay of the claims of the several groups in the community.

There is, however, one phase of the efforts of the unions to maintain present wage scales which is fraught with special danger. Their efforts in this readjustment period must, if they are to make their case, hold good for an industry as a whole the country over. Only as pressure to maintain wages is exerted on an industry-wide basis can the unions justify their action economically. If they tolerate wage cuts in one market or district and not in the rest, an unfair competitive advantage is likely to come to that market. But so long as labor costs remain fairly uniform for an entire industry and the public will accept a price level based thereon, no one is in the long run the loser.

This discussion of the difference in the situation of the organized and unorganized industries does not assume, however, that costs in the former case cannot be reduced. The unions properly approached would, under present conditions, be almost sure to act favorably on plans which while protecting their other interests, assured full scope for the working ability of every individual worker and removed all artificial restrictions on output. The difficulty is that neither employers nor the community are as yet ready in any but exceptional instances to give adequate protection to these other interests, of which the most important is the assurance of permanent employment and income.

The employers' assumptions in the present period are simple and they have, thus far, been accepted uncritically by the public generally. Without inquiring fundamentally into the basis on which any wage rates are set, they assume that the going rate as determined by local labor conditions is infallible and if increases have to be conceded on a basis of rising living costs, then of course decreases have to

be secured on falling living costs. The present consumption level and status of the worker is taken for granted and thought to be permanent. Wage rates are assumed to be determined as though labor were a commodity. In the second place, the employer, of course, assumes that wages have to be kept on a level which makes profitable competitive production possible, and whatever occurs the margin of profit is to be preserved if not increased; but whether this margin is to be an average profit of pre-war years or of the last three years is not stated. This second assumption is no doubt logical and necessary under present business motivation, and it has led logically enough in the unorganized and highly competitive industries to a reduction in wages. There is, finally, in some few cases a disposition of employers to say that now they have the upper hand they must "show the workers where they get off" and satisfy a will to power which during the war had perforce been suppressed.

Over against this position has to be set that of the organized workers. They are concerned to make an American standard of living a first charge on industry; and if, conceivably, the national income is not yet large enough to make that generally a possibility, such a standard will be fought for and maintained in selected industries where a good start has already been made. Of course, economically and tactically this stand should be accompanied by one in favor of high production standards both in these and in all the industries, since the ultimate basis of a generally prosperous people is a progressively higher per capita production. But the popular idea that present wage levels have some fundamental justification the unions deny, just as they implicitly deny that there is any inherent justice in the present division of the national income among the several economic groups in the community. And they categorically reject the commodity theory of labor. They see, finally, that lowered wages mean lessened aggregate purchasing power and they fear that an extensive application of wage reductions would only delay the return of effective demand; although if, as is likely, the dollar appreciates slightly in value during the period when wages fall the purchasing power of wages will to that extent remain constant and demand will be less drastically curtailed.

It does seem, however, that when the unions point to the enormous war profits or present surpluses of industries as arguments against wage reductions, they are economically on a less sound basis. The critical and relevant point today is not past profits or present surplus; it is rather the cost basis on which production can take place and be assured of a market. To become preoccupied with war profits is to indulge in ineffectual post-mortems, except where it may be necessary to call attention to the floating of securities during the war on which dividends must be paid or to an unwarranted expansion in plant on which the overhead has to be carried.

Indeed, there is every reason for the unions to call attention to the ambiguity attaching to the phrase "average profits," which is what employers claim they are entitled to. For where there has been either an increased rate of dividend or a recapitalization on the basis of war-time earning power, or both, the expectation of future profits on anything like the recent scale is preposterous. No industry could hope to continue to make such payments and survive, since such profits could only be secured by unprecedented wage reduction and labor exploitation.

It will be seen, therefore, that in those

industries where the unions are partially organized or are not in a strong fighting position a disparity of points of view exists between employers, workers, and public, which will make the resumption of production no easy matter. In the industries where unions are strong, wage reductions may come, but they will be comparatively slight; and lower costs and prices must come fundamentally from the more effective application of people to their work, more scientific management, cheaper materials and a lessened rate of profit. In the industries where unions are a negligible factor wage reductions will come most quickly and will tend to lower costs and prices.

The logic of wage reductions is thus not to be characterized in a word. There would seem to be justice in the demand that the manual workers take their part in shouldering the costs of a readjustment which springs from world-wide causes. Yet it is to be remembered that the manual workers have little if any margin for retrenchment and that in the last few months they have through enforced unemployment sacrificed out of all proportion to their ability. The curtailment of profits, on the other hand, seldom if ever means that actual destitution occurs among those thus cut off.

If, as it appears, therefore, domestic demand will pick up either as lower prices are offered or as consumers are sure no further reductions are to be hoped for, the next step seems to be action in order that we may as quickly as possible get over what is at best a period of hardship. We need joint action of employers and unions in the unionized industries to agree promptly upon a basis of deflated profits and labor costs, and honest production standards. We need in the remaining industries a recognition on all sides of the lowered price, cost and profit basis which will start things moving, and a prompt, determined effort to get this new basis into effect. The sooner this painful process is commenced, the sooner it will be over. As a part of this effort we need also a candid statement made personally by employers to their workers as to the economic facts underlying the wage and price adjustment. Knowledge of the facts can do much to allay bitterness and ill-will, as the experience of dozens of firms in conferring with their men on wage reductions has already proved.

Then, as soon as industry is on the upgrade, it is the duty of every group to see what can be done to regularize employment, institute unemployment compensation, remove the roots of individual slacking, create agencies to adjust production to demand more scientifically, and create a volume of new wealth which will remove any possible question as to the possibility of giving every family a really living wage.

REPLACEMENT INSURANCE

BY EDWIN KURTZ*

IN this article its writer wishes to throw a new light on the subject of depreciation and its treatment. In the past the depreciation estimate has been the limiting feature from an accuracy standpoint in all valuation work. This was due to the fact that the methods of attack were wrong, and therefore not capable of scientific application.

In the most recent plan proposed, a new method of attack is outlined. In the application of the scheme, estimates are unnecessary and what has up to the present time been a rule-of-thumb is changed to a science. Instead of actually determining by means of arbitrary curves the amount of depreciation that has accrued over the year and setting aside out of the gross income an amount of money equivalent to it, the new plan provides that each operating company become the insurer, or insurance company, of its own units of property.

The amount of insurance of any given unit of property is made equal to the cost of replacement. The annual premium will then be dependent upon the cost of replacement, and the probability of that unit's going out of service, the latter to be obtained from mortality experience. The total of the premiums of all the property units constitutes the amount that must be set aside annually into an interest bearing fund. It is evident that if these premiums are carefully determined the operating company or the insurer should always be in a position to pay the benefit when a unit goes out of service. Instead of actually paying the money to the old unit, however, a new unit is purchased to replace the old and the entire property becomes perpetuous.

Present-day methods employed in the determination of the annual accrual of depreciation on public utility property are, it is generally agreed, neither accurate nor satisfactory. Nearly every rate case, in which the adequacy or inadequacy of depreciation estimates is an issue, bears evidence of the universal confusion and difference of opinion that exists on the subject of depreciation and its measurement.

Appraisal and valuation engineers, public service commissions, and even courts, have not yet been able to agree on any one method or plan as accurate and scientific. In practically every case where the value of public utility property must be ascertained for transfer purposes, or where the value of the property must be determined for taxation or security issuance purposes, the amount of the accrued depreciation must be evaluated. In such cases, the depreciation problem becomes a matter of paramount importance; and it is indeed quite unfortunate that so much difference of opinion prevails as to its determination. This confusion and non-agreement is principally due to the arbitrary nature of the plans so far proposed.

The shortcomings of the majority of these methods can be tabulated under three headings:

1. Shape of curve assumed.
2. Estimate of average life.
3. Minimum service value.

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Since the straight-line method, Figure 1, is based upon the assumption that depreciation accrues according to a straight-line law in the simple ratio of age to life, the rate of depreciation is evidently constant. Many appraisal engineers realized this and in an endeavor to approximate the facts more closely introduced the sinking fund curve shown in Figure 2. But since the sinking fund curve is also an arbitrary curve there is still reason to believe that this curve does not conform to actual experience.

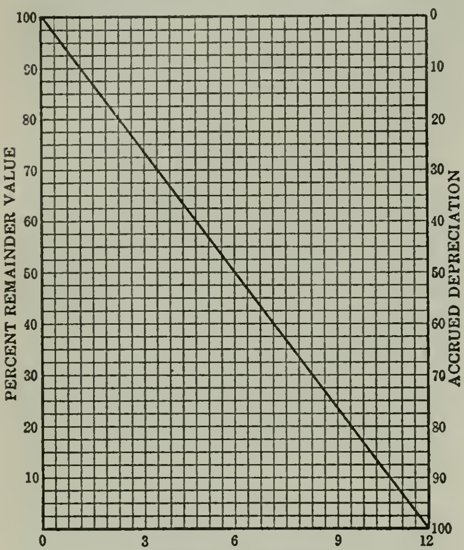

FIGURE 1. STRAIGHT LINE DEPRECIATION CURVE

The estimated average life figures used in connection with the above two methods have until this day been very unreliable. The averages used have not been arrived at by statistical methods, but on the contrary represent only the judgment of appraisers. Those figures have been distorted by prejudices, lack of knowledge, poor judgment, and other human factors.

Furthermore, after such averages have been obtained they cannot be applied universally. Averages are affected by change of condition, frequency of service, climate, management, policy of repairing, and class of construction. Such factors all mean variations from the average and therefore prohibit the use of blanket averages under all possible conditions and circumstances. The appraisers' judgment usually cannot be relied upon to take account of these differences especially where such appraisals are made by those who have had no operating experience, and who are therefore incompetent to judge whether replacements must be made sooner or later than is indicated by the average life used. Many times the estimated average life figures are ordinary arithmetic averages, which have long been discredited as a means of careful calculation, especially from a statistical standpoint. It does not represent prevailing conditions and it gives undue influence to extreme variations.

The following is an extract taken from a paper prepared by James E.

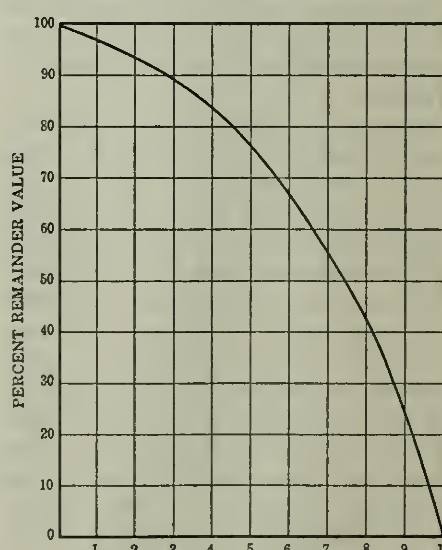

FIGURE 2. SINKING FUND DEPRECIATION CURVE

TABLE 1. AMERICAN EXPERIENCE TABLE OF HUMAN MORTALITY [1]

Age	Number Dying	Number Living	Age	Number Dying	Number Living
10	749	100,000	53	1,091	66,797
11	746	99,251	54	1,143	65,706
12	733	98,505	55	1,199	64,563
13	740	97,762	56	1,260	63,364
14	737	97,022	57	1,325	62,104
15	735	96,285	58	1,394	60,779
16	732	95,550	59	1,468	59,385
17	729	94,818	60	1,546	57,917
18	727	94,089	61	1,628	56,371
19	725	93,362	62	1,713	54,743
20	723	92,637	63	1,800	53,030
21	722	91,914	64	1,889	51,230
22	721	91,192	65	1,980	49,341
23	720	90,471	66	2,070	47,361
24	719	89,751	67	2,158	45,291
25	718	89,032	68	2,243	43,133
26	718	88,314	69	2,321	40,890
27	718	87,596	70	2,391	38,569
28	718	86,878	71	2,448	36,178
29	719	86,160	72	2,487	33,730
30	720	85,441	73	2,505	31,243
31	721	84,721	74	2,501	28,738
32	723	84,000	75	2,476	26,237
33	726	83,277	76	2,431	23,761
34	729	82,551	77	2,369	21,330
35	732	81,822	78	2,291	18,961
36	737	81,090	79	2,196	16,670
37	724	80,353	80	2,091	14,474
38	749	79,611	81	1,964	12,383
39	756	78,862	82	1,816	10,419
40	765	78,106	83	1,648	8,603
41	774	77,341	84	1,470	6,955
42	785	76,567	85	1,292	5,485
43	797	75,782	86	1,114	4,193
44	812	74,985	87	933	3,079
45	828	74,173	88	744	2,145
46	848	73,345	89	555	1,402
47	870	72,497	90	385	847
48	896	71,627	91	246	462
49	927	70,731	92	137	216
50	962	69,804	93	58	79
51	1,001	68,842	94	18	21
52	1,004	67,841	95	3	3

[1] See Figure 3.

Allison, Commissioner and Chief Engineer of the St. Louis Public Service Commission, dated September 11, 1912, which clearly points to the unreliability of estimates of useful or average life in common use today in valuation work:

An examination of the estimates of different species of property as used in most published valuation reports will show that there is comparatively close agreement in the lives assigned to similar items of equipment. This might indicate that these estimates were the result of reliable statistics of experience gathered throughout the whole field where the class of equipment in question is used. As a matter of fact no such broad collection of reliable data has ever been made, and these estimates of average life admittedly represent only the opinions of certain men as to the probable average period of usefulness of different items of equipment. The fact that they coincide within certain limits only goes to show that

Table 2. Experience Table of Cross Ties Surviving[1]

Age (Years)	Per cent of Cross Ties Surviving	Number of Cross Ties Surviving
0	100.0	440,009
1	99.5	437,923
2	97.0	427,705
3	94.3	414,773
4	90.2	397,404
5	83.4	367,270
6	71.0	312,464
7	58.1	255,798
8	45.7	201,512
9	36.4	160,080
10	23.1	101,475
11	16.7	73,647
12	12.0	52,550
13	8.2	36,043
14	5.5	24,310
15	4.4	19,080
16	2.1	9,115
17	0.0	0

[1] See Figure 6.

Table 3. Number of Locomotives Surviving[1]

Age (Years)	Per cent of Locomotives Surviving	Number of Locomotives Surviving
0	100.0	781
1	99.9	780
2	99.8	779
3	99.7	778
4	99.6	778
5	99.5	777
6	99.4	776
7	99.3	775
8	99.2	774
9	99.1	773
10	99.0	773
11	98.9	772
12	97.0	758
13	93.7	732
14	92.6	723
15	89.8	701
16	86.7	677
17	82.9	647
18	80.3	627
19	75.7	591
20	71.0	555
21	62.7	490
22	56.9	444
23	52.0	406
24	47.7	373
25	43.8	342
26	41.1	321
27	36.2	283
28	32.6	255
29	30.0	234
30	25.8	201
31	21.2	166
32	17.8	139
33	14.1	110
34	11.3	88
35	9.1	71
36	6.9	54
37	5.7	45
38	4.8	37
39	4.3	33
40	4.0	31
41	3.6	28
42	2.9	23
43	2.0	16
44	1.2	9
45	0.0	0

[1] See Figure 5.

TABLE 4. NUMBER OF POLES SURVIVING[1]

Age (Years)	Per cent of Poles Surviving	Number of Poles Surviving
0	100.0	248,707
1	99.5	247,557
2	97.8	243,336
3	93.6	232,644
4	88.0	218,678
5	81.2	202,045
6	73.8	183,834
7	66.3	164,823
8	58.5	145,563
9	50.1	124,654
10	42.1	104,775
11	33.8	84,011
12	27.6	68,557
13	21.8	54,320
14	16.3	40,541
15	12.4	30,777
16	8.9	22,243
17	5.9	14,584
18	3.1	7,666
19	1.2	3,075
20	0.5	1,277
21	0.2	462
22	0.06	149
23	0.02	47
24	0.00	0

[1] See Figure 4.

TABLE 5. NUMBER OF BOX CARS SURVIVING[1]

Age (Years)	Per cent of Box Cars Surviving	Number of Box Cars Surviving
0	100.0	8,788
1	99.8	8,770
2	99.6	8,753
3	99.2	8,718
4	99.1	8,709
5	98.6	8,683
6	98.2	8,630
7	97.8	8,595
8	97.3	8,551
9	96.7	8,498
10	95.9	8,428
11	95.0	8,351
12	94.4	8,298
13	92.5	8,131
14	90.2	7,929
15	87.7	7,707
16	84.0	7,382
17	80.2	7,048
18	75.4	6,628
19	69.8	6,134
20	58.9	5,176
21	47.7	4,192
22	39.8	3,498
23	30.2	2,654
24	22.1	1,942
25	15.7	1,380
26	8.8	773
27	4.7	413
28	1.5	132
29	0.19	17
30	0.00	0

[1] See Figure 7.

the later guessers did not care to differ very greatly from their predecessors on a subject concerning which there was very little to be found to support an argument one way or another.

To cover many of the errors pointed out under headings 1 and 2, appraisers have resorted to the use of a minimum service value, which has come to mean the smallest possible value that can be given a unit while that unit is still rendering service. In other words a unit in service cannot depreciate to zero value but it can depreciate to a minimum service value. This minimum service value varies from 5 to 25 per cent of original cost new. If the average life of a given unit is 10 years and it actually remains in service 15 years it would seem as though the unit had depreciated to the point where it became a liability to the company. The very fact that the unit is still in service, however, raises the presumption that it could not have depreciated upon a straight line or sinking fund basis to the average in previous years. The establishment of the minimum

Table 6. Number of Steam Engines Surviving[1]

Age (Years)	Per cent of Steam Engines Surviving	Number of Steam Engines Surviving
0	100.0	17
16	94.2	16
21	88.3	15
24	76.5	13
25	70.6	12
26	64.8	11
28	53.0	9
29	47.1	8
32	35.3	6
33	29.4	5
39	23.6	4
40	11.8	2
47	5.9	1
51	0.0	0

[1] See Figure 8.

service value is therefore another arbitrary proposition and thus also adds to the unscientific features of the methods discussed.

No improvement may be made unless one or all of the shortcomings described are done away with. Any new method must first of all be a method in which the curve used represents experience data, thus eliminating assumptions. It must make unnecessary the use of average life estimates or outline means by which these estimates can be made reliable and representative. It must also do away with the use of a minimum service value. The above outlined requirements, it seems, are fulfilled in the method proposed in the subsequent paragraphs.

II

Two general classes of probabilities are known today. The first is that class of probabilities which is susceptible to an exact mathematical analysis. This class includes such chance events as games, tossing of a coin, or the drawing of a ball from an urn. The other class includes those numerous sociological and economic problems which really constitute the important and practical problems of probability.

Games are an example of the first class of probabilities. However long we may continue our examination of games we see no trace of secular fluctuation as we will find exists in the second class, but on the contrary, unceasing uniformity characterizes this class of probability. There can be no doubt that this fixity of uniformity exists, and it is indeed reasonable to expect that it will continue as long as the present order of things continues.

Although no one can, in the case of the tossed coin, say that a single throw will fall a head or a tail, it is certain that eventually the number of heads will equal the number of tails. The

Table 7. Number of Wheels in Service[1]

Car Miles Run (Thousands)	Percentage of Wheels in Service	Number of Wheels in Service
0	100.0	939
5	96.0	902
10	87.0	817
15	83.5	784
20	71.0	666
25	57.1	536
30	43.2	405
35	27.5	258
40	16.9	159
45	10.1	95
50	4.9	48
55	3.2	30
60	2.1	19
65	1.8	17
70	1.0	10
75	0.8	7
80	0.5	5
85	0.0	0

[1] See Figure 9.

TABLE 8. NUMBER OF COAL-FLAT CARS SURVIVING[1]

Age (Year)	Per cent of Coal-Flat Cars Surviving	Number of Coal-Flat Cars Surviving
0	100.0	2,712
1	99.8	2,706
2	99.7	2,703
3	99.5	2,698
4	99.1	2,687
5	98.8	2,679
6	98.6	2,674
7	98.0	2,658
8	97.6	2,647
9	97.1	2,633
10	96.2	2,609
11	94.8	2,571
12	91.0	2,470
13	86.7	2,351
14	82.2	2,229
15	77.8	2,110
16	72.6	1,969
17	67.1	1,820
18	61.4	1,665
19	53.7	1,456
20	45.9	1,245
21	36.4	987
22	25.5	692
23	18.3	496
24	12.4	336
25	7.4	203
26	5.7	155
27	3.4	92
28	2.2	60
29	1.1	30
30	0.4	11
31	0.2	5
32	0.0	0

[1] See Figure 16.

results of the successive throws may be conceived to form a series. The separate throws of this series seem to occur in utter disorder; it is this disorder which gives rise to uncertainty about them. Sometimes there is a repetition of the same face; sometimes there is not. So long as we confine our observations to a few throws at a time, the series seems to be chaotic. But the results of a long succession show a marked distinction; a kind of order begins gradually to emerge and at last assumes a distinct and striking aspect. Heads and tails occur in about equal numbers, as do similar repetitions of different faces. In a word, notwithstanding the individual disorder, an aggregate order begins to prevail.

This fact expresses one of the greatest laws of probability, Bernoulli's Law of Great Numbers, a more detailed statement and application of which is given in the sequel. If a million coins were tossed and the heads and tails

TABLE 9. NUMBER OF LAMPS BURNING (HOURS OF SERVICE)[1]

Hours of Service	Per cent Lamps Burning	Number of Lamps Burning
0	100.0	75
600	100.0	75
650	98.0	73
700	93.4	70
750	92.0	69
800	91.0	68
850	89.0	67
900	88.0	66
950	87.0	65
1000	83.0	62
1050	78.0	58
1100	73.0	55
1150	67.0	50
1200	59.0	44
1250	58.0	43
1300	53.0	40
1350	35.0	26
1400	25.0	19
1450	15.0	11
1500	11.0	8
1550	8.0	6
1600	4.4	3
1650	3.0	2
1700	2.0	1
1750	0.0	0

[1] See Figure 12.

counted, it would be expected from this law that 500,000 each would be found so that the fraction:

$$\frac{\textit{No. of heads}}{\textit{1,000,000}}=\frac{\textit{No. of tails}}{\textit{1,000,000}}=\tfrac{1}{2}\ \textit{approximately}$$

In fact Em Borel-Le Hasard (page 36) states that the probability of either fraction being less than 0.493 or greater than 0.507 is so small that were every person on earth to perform this experiment ten thousand million times every second for 10 to the 18 power centuries, these fractions would only once exceed the bounds given. This fact makes evident that such and similar cases can be solved by pure mathematics and mathematics alone.

If, however, we take for example, from the second class, the average duration of life, we find that we have a problem of an entirely different type, a problem that cannot be solved by mathematics alone, but by the joint use of mathematics and statistics or experience data. Let us assume that our data are sufficiently extensive and therefore tolerably regular and uniform. This will obtain if a great number of lives are examined. Though the length of a single life will be found to be proverbially uncertain, the average duration of a number of lives will in an almost equal degree be bound to be proverbially certain. The larger the number we take out of any mixed crowd the clearer become the symptoms of order and the more nearly will the average length of each selected

Table 10. Per cent of Lamps Burning (Time in Service)[1]

Time in Service (*1000 Hours*)	Per cent Lamps Burning
0	100.0
1	99.5
2	97.5
3	94.4
4	90.2
5	85.0
6	79.4
7	72.7
8	65.5
9	57.6
10	50.0
11	42.1
12	34.4
13	27.4
14	20.7
15	15.0
16	10.0
17	5.6
18	2.3
19	1.0
20	0.0

[1] See Figure 11.

Table 11. Per cent and Number of Waterworks Pumps Surviving[1]

Age (Years)	Per cent of Waterworks Pumps Surviving	Number of Waterworks Pumps Surviving
0	100.0	48
3	97.9	47
8	95.8	46
9	91.6	44
10	85.4	41
13	77.1	37
15	70.9	34
16	66.7	32
17	62.5	30
18	58.3	28
19	50.0	24
20	43.8	21
21	41.7	20
23	37.5	18
25	31.3	15
27	27.1	13
29	20.9	10
32	8.4	4
33	6.3	3
36	4.2	2
46	2.0	1
50	0.0	0

[1] See Figure 13.

class be the same. Now, we know that today the average life may be, say 30 years, while a century ago it was decidedly less. Several centuries ago it was very much less. It is probable that the future can expect a steadily increasing duration of life, to be brought about by a better knowledge of sanitation, surgery and nursing, better habits and better environment. All that this change in the average life duration shows, however, is that the eternally fixed uniformity found to be existent in the simple tossing of a coin does not obtain in the present case. The duration of life has changed in the past—

TABLE 12. PER CENT AND NUMBER OF POLES SURVIVING[1]

Age (Years)	Per cent of Poles Surviving	Number of Poles Surviving
0	100.0	1,372
1	99.9	1,371
2	96.6	1,326
3	94.4	1,294
4	81.8	1,123
5	75.5	1,035
6	74.1	1,017
7	70.0	960
8	61.0	836
9	51.7	710
10	46.4	637
11	31.4	430
12	24.7	339
13	14.9	205
14	14.5	199
15	13.6	187
16	13.3	182
17	10.9	150
18	4.9	68
19	4.1	56
20	4.1	56
21	2.5	34
22	1.8	25
23	1.0	14
24	0.0	0

[1] See Figure 14

TABLE 13. PER CENT AND NUMBER OF STOCK CARS SURVIVING[1]

Age (Years)	Per cent of Stock Cars Surviving	Number of Stock Cars Surviving
0	100.0	3,351
1	99.8	3,344
2	99.7	3,341
3	99.5	3,334
4	99.4	3,331
5	99.1	3,321
6	98.6	3,304
7	98.0	3,284
8	97.1	3,254
9	93.6	3,136
10	91.5	3,066
11	90.0	3,016
12	87.7	2,939
13	83.9	2,811
14	79.7	2,671
15	77.3	2,590
16	72.6	2,433
17	66.6	2,232
18	58.7	1,967
19	50.0	1,675
20	40.7	1,364
21	30.4	1,019
22	22.4	751
23	14.7	493
24	8.3	278
25	4.0	134
26	2.0	67
27	0.65	22
28	0.17	6
29	0.08	3
30	0.05	2
31	0.02	1
32	0.00	0

[1] See Figure 15.

and under the influence of future eddies of habits, custom, and knowledge, may continue to vary with no degree of regularity.

Here then are examples of two different characteristic probabilities; one is susceptible to pure mathematical analysis, and the other must be supplemented by actual experience data.

TABLE 14. PER CENT AND NUMBER OF FREIGHT CARS SURVIVING[1]

Age (Years)	Per cent of Freight Cars Surviving	Number of Freight Cars Surviving
0	100.0	15,372
1	99.8	15,341
2	99.6	15,310
3	99.3	15,264
4	99.1	15,234
5	98.8	15,187
6	98.4	15,126
7	97.9	15,049
8	97.3	14,957
9	96.1	14,772
10	95.0	14,603
11	94.0	14,450
12	92.3	14,188
13	89.6	13,773
14	86.5	13,297
15	83.6	12,851
16	79.5	12,221
17	74.5	11,452
18	68.4	10,514
19	61.3	9,423
20	51.4	7,901
21	41.0	6,303
22	32.4	4,981
23	23.7	3,643
24	16.7	2,567
25	10.8	1,645
26	6.4	984
27	3.4	523
28	1.3	200
29	0.3	46
30	0.09	14
31	0.04	6
32	0.00	0

[1] See Figure 10.

They are alike in their initial irregularity, alike in their subsequent regularity; it is in what we may term their ultimate form that they begin to diverge. The one tends without any permanent variation toward a fixed numerical proportion in its uniformity; in the other the uniformity is found at last to fluctuate and to fluctuate in a manner irreducible to rule.

The fact should not be overlooked, however, that it is only in a comparatively few cases which have practical significance that we are able to make a predetermined mathematical analysis of the probabilities. It is possible in games, in tossing a coin, and in drawing balls from an urn, etc., but in all cases where organic life enters as a dominant factor, we are unable to make such sharp distinctions. Many extremely complex factors enter into the determination of the life expectation of a person; such as the health of the person, his surroundings, his daily life, the climate in his locality, social conditions, environment, etc. Our only recourse in such cases is to actual

TABLE 15. PER CENT OF AERIAL CABLE SURVIVING[1]

Years in Service	Per cent of Aerial Cable Surviving
0	100.0
1	98.7
2	96.0
3	92.3
4	87.2
5	80.8
6	73.1
7	64.5
8	57.0
9	50.3
10	44.3
11	38.8
12	33.8
13	29.3
14	25.3
15	21.7
16	18.3
17	15.1
18	12.2
19	9.5
20	6.9
21	4.6
22	2.6
23	1.0
24	0.0

[1] See Table 18.

Table 16. Per cent of Aerial Cable Surviving[1]

Years in Service	Per cent of Aerial Cable Surviving
0	100.0
1	99.4
2	97.6
3	94.7
4	90.5
5	84.8
6	77.7
7	68.9
8	59.3
9	49.4
10	39.5
11	31.0
12	24.2
13	18.3
14	13.4
15	9.4
16	5.9
17	3.2
18	1.2
19	0.0

[1] See Figure 19.

observation. By observing a large number of persons of the same age, x, we may in a purely empirical way determine the rate of death or survival. Such a determination of an unknown probability is thus a probability into the determination of which actual experience has entered as a dominant factor.

Another example of empirical probability, which in all respects is identical to that of human life expectation, is that of utility equipment life expectation. To be sure, it is no less complex; for in it also enter a variety and diversity of causes, which can in no way be definitely determined. Referring again to the tossing of a coin, it is obvious that if a qualitative and quantitative analysis could be made of all the factors that determine whether a coin will fall heads or will fall tails, gambling could be made an exceedingly remunerative business. If the effect of the rotational speed could be determined, if the effect of air currents could be accurately evaluated, and if the effects of air resistance, inertia of coin, elastic properties of coin and floor, etc., could all be minutely analyzed and predetermined, tossing a coin would no longer be classed as a chance event, but instead as a scientifically and mathematically governable and controllable event. Speaking absolutely, there is no such thing as chance or probability. All phenomena are the results of causation. But from the viewpoint of the individual everything which he cannot voluntarily cause or prevent is chance. As stated above, if we could discern and compute the significance of all causes there would be no question about chance or probability in anything.

Similar, indeed, is the matter of human life. The causes that govern, control, influence, limit, and determine the length of human life are equally so

Table 17. Per cent of Submarine Cable Surviving[1]

Years in Service	Per cent of Submarine Cable Surviving
0	100.0
1	98.8
2	95.6
3	91.6
4	87.1
5	82.2
6	76.9
7	71.2
8	65.0
9	58.3
10	51.2
11	43.6
12	35.6
13	27.4
14	19.3
15	12.4
16	6.8
17	2.7
18	0.0

[1] See Figure 20.

numerous and complicated that they will undoubtedly never be fully understood nor subject to analytic solution. For this reason, the probability of human life is classed as a chance event.

The causes that govern and influence the length of the useful life of utility equipment or apparatus apparently are in no way of less complexity. Obviously any one of several causes, like physical decay, wear and tear, inadequacy, obsolescence, tenure of holding, etc., could limit the life; any two together would change that life; and all of them operating jointly would modify it still more. It is not difficult to see how physical decay will ultimately bring the useful life of a piece of apparatus to an end. However, it is quite different if two or more forces acting jointly must be considered. It is undoubtedly true that only a few cases of equipment exist on which only one of the forces mentioned acts. In nearly all instances not only two but a variety and diversity of forces operate. Consequently, predeterminable qualitative and quantitive analysis is impossible. We can truthfully say that it is a lack of understanding, a lack of knowledge, foresight, and co-ordination, that necessarily compels us to class the life of utility apparatus as a chance event.

The similarity of two examples of empirical probability, human life expectation and utility life expectation, has been pointed out. This similarity suggests that it is possible to make as much of a science of utility life expectation as of human life expectation. And who, today, can say that our colossal insurance business is not a safe, sane, and honest business? Who would say that the insurance people are gamblers, gambling on human life? With an immense amount of experience data in their hands they rest secure. Briefly, it may be said that

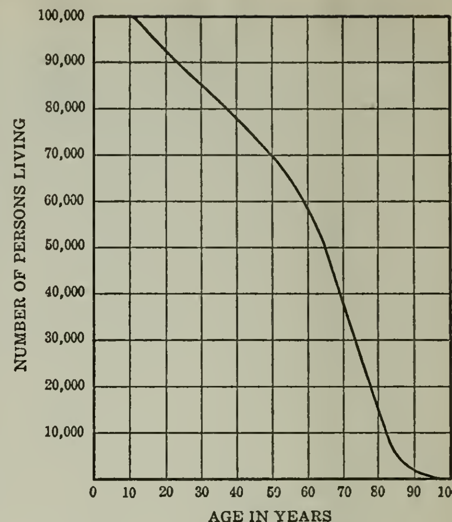

Figure 3. Human Mortality Curve

the enormous insurance business rests on the so-called, "Human Mortality Table" (Figure 3) as a foundation. And what is the Mortality Table? It is nothing more than a record of the life of human beings. It shows that out of a given number of people of a given age, x, a given number die within the year.

The mortality table (page 43) is an application of the "Law of Great Numbers." By using large numbers the company is assured that in the end a definite number of people will die at a specified age. Indeed, life insurance, in fact all actuarial science, is a direct and simple application of the fundamental laws of chance.

The Human Mortality Table is a summary of human life experience. The figures given are the result, not the cause. The causes of death are not shown nor indicated. In fact, as was mentioned before, they were so complex that they could neither be shown nor diagnosed. But if we know the actual results we have the facts that at present concern us. In other words, the figures are a cloak whose outward

TABLE 18. PER CENT OF UNDERGROUND CABLE SURVIVING[1]

Years in Service	Per cent of Underground Cable Surviving
0	100.0
1	99.5
2	98.6
3	97.0
4	95.1
5	93.0
6	90.2
7	86.9
8	82.9
9	78.4
10	73.4
11	68.2
12	62.4
13	56.0
14	49.1
15	42.0
16	35.0
17	28.5
18	23.0
19	17.9
20	13.8
21	10.3
22	7.6
23	5.1
24	3.2
25	1.8
26	0.7
27	0.0

[1] See Figure 21.

appearance we see, what is underneath we cannot see, and perhaps never will be disclosed as long as our complex social structure continues to grow.

In a like manner the results of experience of utility equipment can be embodied in a mortality table. All that is necessary is to obtain a fair, accurate, and sound mortality table of each type of equipment and we have at our command the data that will take the "guess," the "estimate," the "opinion," the "bias," the "prejudice," and the "partiality," out of average life figures and all other calculations connected thereto.

The following are typical examples of the sort of experience data that is being referred to. To a large extent the experience data of any one type of equipment are those of one company. These would not be proper data to use for other operating companies. To obtain reliable and extensive data, the Interstate Commerce Commission should compel the surrender of all data of this type on all kinds of equipment from all utilities operating in the United States. All data should be carefully scrutinized, the inaccurate and doubtful eliminated, and the remainder combined in a table. This table could be modified from time to time in order to make allowance for progress and general changes.

III

Fundamentally, the purpose of annually setting aside amounts into a depreciation reserve is to safeguard capital assets in order that they may render continuous service at maximum efficiency. The primary object thus resolves itself into the accumulation of such amounts of money as will make possible the purchase of new units of equipment as the old units become unfit for further service. This fact makes perfectly obvious the necessity of considering the probability of replacement or going out of service, if the unit is to be satisfactorily safeguarded.

If we consider the probability of replacement we must naturally take account of all the different forces which cause the need of replacement or displacement. The ultimate result and effect of the action of any one of the causes of depreciation, as for example, decay, inadequacy, or obsolescence, is to render the unit of equipment unfit

and uneconomical for further service, the consequence of which is replacement, if continuous and unimpaired service is to be rendered.

As regards the probability of replacement of a unit of equipment, only two events are possible; one event will be favorable and the other unfavorable; the unit either will live throughout the year considered, or will die or go out of service within the year. Of these two likely events, the probability will be the measure of likelihood of either of these events. It will be an indication of their relative magnitudes.

A probability is always a fraction. It is always less than unity. In the general case, if we let a represent the number of favorable cases and b the number of unfavorable cases, $a + b$ will be the total number of cases and the ratio of $\frac{a}{a+b}$ will represent the probability that the event will happen favorably, and $\frac{b}{a+b}$ the probability that it will happen unfavorably. If, for example, there are no unfavorable cases, $b = o$ and $p = \frac{a}{a+o} = 1$; this means that the event must happen favorably and with certainty. Unity probability therefore represents certainty and takes all element of doubt and chance out of the event.

If there are no favorable cases the event is impossible, which fact will be evident by substituting the value, $a = o$,

$$p = \frac{o}{o+b} = o.$$

Since an event must either happen or fail we may represent the probability of the happening of the event by $p = 1 - \frac{b}{a+b}$ and the probability of failing of the event q by $1 - \frac{a}{a+b}$. The truth of these expressions can be easily verified, thus:

$$p = 1 - \frac{b}{a+b} = \frac{a+b-b}{a+b} = \frac{a}{a+b}$$

and

$$q = 1 - \frac{a}{a+b} = \frac{a+b-a}{a+b} = \frac{b}{a+b}$$

also

$$p + q = \frac{a}{a+b} + \frac{b}{a+b} = \frac{a+b}{a+b} = 1$$

The last equation shows that the sum of the alternative probabilities, that an event will happen and that it will not happen, exhaust all the probabilities and make a certainty. From this it follows that the value of either of them may be determined when the value of the other is known, for the fractions are complementary to one another.

It has thus become evident that if we are to ascertain the probability of an event we must first separate out a group of objects, to each of which the event is at first view equally likely to happen. By observing this group for a certain space of time we will see that the group separates itself into those to which the event has not happened and to those to which it has happened. Obviously, we have such data in the mortality curves presented in Figures 4 to 22 inclusive.

Mortality tables consist of two elementary columns (see Table 19), from which others are derived and on which all calculations are based. The first of these known as the x[1] column is the age

[1] Explanation of notation used: Age of unit is denoted by x; the number of units in service at age x by L_x, and the number in service at age $x+1$ by L_{x+1}; the number going out of services between ages x and $x+1$ by d_x; the probability that a unit will remain in service at least one year by p_x, and the probability that it will not go out of service within the year by q_x. x will also be frequently used to denote a unit aged x.

The probability of a unit continuing in service for one year from age x is, $p_x = \frac{L_{x+1}}{L_x}$ and the probability of going out of service is $q_x = \frac{d_x}{l_x} = \frac{L_x - L_{x+1}}{L_x}$.

TABLE 19. YEARLY PROBABILITY OF LIFE AND DEATH[1]

Age	Number Living	Number Dying	Yearly Probability of Living	Yearly Probability of Dying
x	L_x	d_x	p_x	q_x
0	248,707	1,148	0.99538	0.00461
1	247,559	4,223	0.98294	0.01706
2	243,336	10,692	0.95606	0.04394
3	232,655	13,966	0.93997	0.06003
4	218,678	16,633	0.92394	0.07606
5	202,045	18,211	0.90986	0.09013
6	183,834	19,011	0.89658	0.10341
7	164,823	19,260	0.88315	0.11685
8	145,563	20,909	0.85635	0.14364
9	124,654	19,879	0.84052	0.15947
10	104,775	20,764	0.80182	0.19818
11	84,011	15,454	0.81605	0.18395
12	68,557	14,237	0.79233	0.20766
13	54,320	14,779	0.74634	0.25366
14	40,541	9,764	0.75915	0.24084
15	30,777	8,534	0.72271	0.27728
16	22,243	7,659	0.66781	0.34433
17	14,584	6,918	0.52564	0.47435
18	7,666	4,591	0.40112	0.59888
19	3,075	1,798	0.41528	0.58471
20	1,277	815	0.36178	0.63862
21	462	313	0.32251	0.67748
22	149	102	0.31543	0.68456
23	47	47	0.00000	1.00000
24	0	0		

[1] See Figure 22.

column. It begins from *o*, the datum time which is the time at which the unit was placed in service. The column continues to the maximum individual useful life. The other column is called the L_x column. It shows the number of units supposed to have been put into service at age zero, and further shows how many survive at each year of age till the limit of life is reached. The number with which the L_x column starts is called the radix of the table.

A third column, d_x, which gives the number of units going out of service during each successive year can be readily deduced from the first two columns for

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A numerical substitution taken from the mortality data on poles follows:

$$p_6 = \frac{L_{6+1}}{L_6} = \frac{183{,}834}{202{,}045} = 0.90986$$

and

$$q_6 = \frac{d_6}{L_5} = \frac{18{,}211}{202{,}045} = 0.09013$$

also

$$p_6 + q_6 = 0.90986 + 0.09013 = 1.0000$$

The values of p_x and q_x have been computed for the data on telephone poles. The data on poles are perhaps more uniform and regular than that of any other equipment shown and has therefore been selected for purposes of illustration of the analytic solution that is to follow.

$$d_x = L_x - L_{x+1}$$

or

$$L_x = L_{x+1} + d_x$$

If the d_x column be added from the last age upward the sum will be equal to L_x, that is $d_x = L$. Again, the number in the L_x column at any age is equal to the sum of the d_x column from that age to the end of the table.

IV

Very seldom indeed is it possible to gather regular data from a heterogeneous source. In practically all cases one finds that the data will be sufficiently regular and uniform to portray the general tendencies, but in few cases can it be said that the data are tolerably smooth. Mortality data are no exception and although, in most cases, they are uniform enough to exhibit the laws underlying it, minor irregularities generally obtain that must be smoothed out if closer agreement with these laws and more uniform results in the calculations are desired.

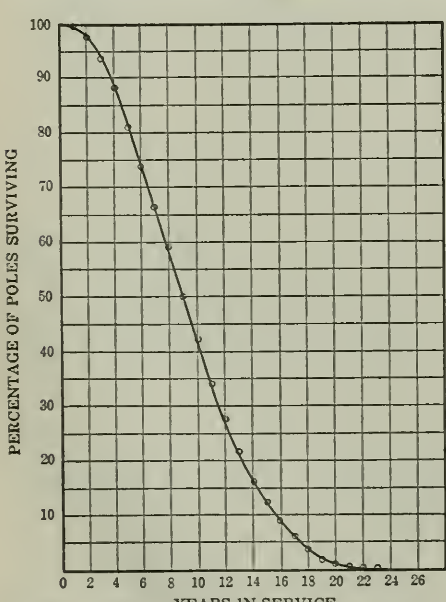

Figure 4. Summarizing Experience of 248,-707 Wooden Poles

One of the commonest and simplest methods of smoothing mortality tables is by use of the graphic method. The graphic method of graduating tables arises naturally from the graphic method of representing them. In this method the values of either q_x, p_x, or d_x are plotted against age in a diagram. For convenience in plotting accurately ruled section paper of large dimensions should be used. The years of age are represented by equal intervals along the base, or abscissa, and the d_x or other function is represented by the length of the ordinates above this base line. When all the points corresponding to the successive ages are plotted and joined by straight lines it is found in an ungraduated table that the result is a zigzag line full of minor irregularities, but showing indications of an underlying regular law. The graduation in the graphic method is effected by drawing among these points, but not necessarily through any of them, a smooth curve to represent this law. After the regular curve is thus drawn the new values of the ordinates are read off.

This method was employed in the graduation of the values of the d_x column of Table 20. On Figure 17 appear the old points in circles and the new points in crosses. Only a few have been corrected. This method no doubt is only an approximate method and is not very scientific. It is simple and easy to understand, however, and has therefore been introduced here.

Another step in the preparation of the data for actual use is the change of radix of the mortality table. The data as brought from the field may comprise several thousand units or several hundred thousand units. As far as the value of the data goes, each table within its limitations represents a law.

TABLE 20. MORTALITY TABLE OF TELEPHONE POLES[1]

Adjusted Values			Old Adjusted Values		New Values of
x	d_x	d_x	L_x	p_x	L_x
0	1,148	1,148	246,150	0.99533	100,000
1	4,223	4,223	245,002	0.98276	99,553
2	10,692	10,692	240,779	0.95838	97,817
3	13,966	13,966	230,087	0.93930	93,746
4	16,633	16,633	216,121	0.92304	88,055
5	18,211	18,211	199,488	0.90871	81,278
6	19,011	19,011	181,277	0.89512	73,858
7	19,260	19,750	162,266	0.87828	65,822
8	20,909	20,909	142,516	0.85326	57,811
9	19,879	19,879	121,607	0.83653	49,334
10	20,764	18,500	101,728	0.81814	41,270
11	15,454	16,750	83,228	0.79874	33,765
12	14,237	14,237	66,478	0.78584	26,970
13	13,779	11,700	52,241	0.77604	21,194
14	9,764	9,764	40,541	0.75915	16,448
15	8,534	8,534	30,777	0.72271	12,486
16	7,659	7,659	22,243	0.66781	9,024
17	6,918	6,918	14,584	0.52564	6,026
18	4,591	4,591	7,666	0.40112	3,167
19	1,798	1,798	3,075	0.41528	1,270
20	815	815	1,277	0.36178	527
21	313	313	462	0.32251	191
22	102	102	149	0.31543	62
23	47	47	47	0.00000	20
24	0	0	0		0

[1] See Figure 17.

However, in order that these laws and the computations obtained therefrom may be better compared, the tables are changed to the same radix. This can be easily done by computing the probability, p_x, from the old data and then multiplying the new radix and the new values of L_x consecutively by the corresponding values of p_x. 100,000 has been taken as a convenient radix. Such a large number will do away with fractional parts in the values of L_x and d_x. It is, therefore, a convenient figure to use.

Referring again to the mortality table of telephone poles (Table 20) it is seen that 246,150 units are involved. This figure was changed to 100,000 and the other values of L_x were obtained by merely multiplying this radix by 0.99533, the probability of first year survival, and then multiplying 99,533 by 0.98276 the probability of second year survival, etc., to end of the table. In this way the new table is obtained.

V

No other word strikes as close to the root of the word "depreciation" as the word "insurance." The fact has been stated that the annual depreciation allowances are primarily set aside for the purpose of safeguarding capital

Table 21. Mortality Table with C_x and M_x Columns

x	d_x	v^{x+1}	$C_x = v^{x+1}d_x$	$M_x = \Sigma C_x$
0	467	0.9615	449.0	68,831.4
1	1,717	0.9245	1,587.4	68,382.4
2	4,072	0.8889	3,619.6	66,795.0
3	5,693	0.8548	4,866.4	63,175.4
4	6,778	0.8219	5,570.8	58,309.0
5	7,421	0.7903	5,864.8	52,738.2
6	8,037	0.7599	6,107.3	46,873.4
7	8,012	0.7307	5,854.4	40,766.1
8	8,478	0.7026	5,956.6	34,911.7
9	8,065	0.6755	5,447.9	28,955.1
10	7,506	0.6496	4,583.6	23,507.2
11	6,797	0.6246	4,245.4	18,923.6
12	5,778	0.6006	3,470.2	14,678.2
13	4,748	0.5775	2,741.9	11,208.0
14	3,964	0.5552	2,200.8	8,466.1
15	3,463	0.5339	1,848.9	6,265.3
16	2,998	0.5134	1,539.2	4,416.4
17	2,859	0.4936	1,411.2	2,877.2
18	1,897	0.4746	900.3	1,466.0
19	743	0.4564	339.1	565.7
20	336	0.4388	147.4	226.6
21	129	0.4219	54.4	79.2
22	42	0.4057	17.0	24.8
23	20	0.3901	7.8	7.8
24	0			

assets, or in other words, for the purpose of accumulating such amounts of money as would make possible the purchase and replacement, or displacement, as the case may be, of units as they became economically unfit for further service. Insurance in its fundamental aspects represents this identical process. In the insurance business the person seeking insurance sets an arbitrary value on himself or his life. He then begins to pay annually, into a reserve, equal yearly payments. If these payments are correctly computed they will at the time of his death sum up to the original value he set upon his life. This statement is not literally true. If only one life or person is considered, it is evident that it can not be true, for the given individual may die at any time. He may not live out his computed expectation, and the total payments made may not be equal to his assurance. However, if a large number of persons are considered, it can be said that any given person of that large number makes payments which will total or sum up at the time of his death to the equivalent of the value he set upon his life.

In this application of insurance principles to replacement insurance the cost of the unit under consideration is analogous to the value of the assurance, or the benefit, and the annual depreciation allowances are analogous to the annual insurance premiums. Into the determination of the annual premium enter two important factors; the death rate and the rate of interest

Table 22. Mortality Table with D_x and A_x Columns

x	$M_x = \Sigma C_x$	$D_x = V^x L_x$	$A_x = \frac{M_x}{D_x}$
0	68,831.4	100,000.0	0.68831
1	68,382.4	95,700.9	0.71454
2	66,795.0	90,431.8	0.73862
3	63,175.4	83,330.8	0.75812
4	58,309.0	75,269.4	0.77469
5	52,738.2	66,802.4	0.78947
6	46,873.4	58,369.9	0.80304
7	40,766.1	50,018.1	0.81502
8	34,911.7	42,242.5	0.82647
9	28,955.1	34,662.0	0.83535
10	23,507.2	27,877.9	0.84321
11	18,923.6	21,933.7	0.86276
12	14,678.2	16,845.5	0.87135
13	11,208.0	12,729.1	0.88051
14	8,466.1	9,498.7	0.89129
15	6,265.3	6,932.2	0.90380
16	4,416.4	4,817.9	0.91667
17	2,877.2	3,093.7	0.93002
18	1,466.0	1,563.2	0.93782
19	565.7	602.7	0.93861
20	226.6	240.5	0.94220
21	79.2	83.8	0.94510
22	24.8	26.2	0.94650
23	7.8	8.1	0.96290
24			

that can be realized on investments. The death rate is directly obtainable from the mortality table, and in the illustrations that are to follow the interest on investments will be taken as 4 per cent; for that is the rate now extensively used in the application of the sinking fund curves to depreciation problems. For the sake of simplicity the cost of a unit shall be taken as one, in all derivations and computations. Let the lives of L_x units of age x be insured each for one. If this be done the number of replacements in the first year will be d_x and the present values at the beginning of the year of the claims of replacement due at the end of the year would be vd_x, where v represents the present value of one, due one year hence; the deaths in the second year will be d_{x+1}, and the present value of the claims at the beginning of the first year would be $v^2\, d_{x+1}$. The claims at the beginning of the first year for those units displaced in the third year would be $v^3\, d_{x+2}$, etc., to the end of the table. The total present value of all the replacement claims would then be $vd_x+v^2\, d_{x+1} + v^3\, d_{x+2}$ to table limit. If this total present value be distributed equally among the L_x units, we have as the share of each the present value of the benefit, or the assurance, of one at replacement. The net single premium denoted by A_x, A being first letter of word "Assurance" can thus be represented by

$$A_x = \frac{vd_x + v^2\, d_{x+1} + v^3\, d_{x+2} \text{ to table limit}}{L_x}$$

TABLE 23. MORTALITY TABLE WITH N_x COLUMN

x	Lx	V^x	$D_x = V^x L_x$	$N_x = \Sigma D_x$
0	100,000	1.0000	100,999.0	703,081
1	99,533	0.9615	95,700.9	607,380
2	97,817	0.9245	90,431.8	516,948
3	93,746	0.8889	83,330.8	433,617
4	88,055	0.8548	75,269.4	358,348
5	81,278	0.8219	66,802.4	291,545
6	73,858	0.7903	58,369.9	233,176
7	65,822	0.7599	50,018.1	183,158
8	57,811	0.7307	42,242.5	140,915
9	49,334	0.7026	34,662.0	106,253
10	41,270	0.6755	27,877.9	78,375
11	33,765	0.6496	21,933.7	56,442
12	26,970	0.6246	16,845.5	39,596
13	21,194	0.6006	12,729.1	26,867
14	16,448	0.5775	9,498.7	17,368
15	12,486	0.5552	6,932.2	10,436
16	9,024	0.5339	4,817.9	5,618
17	6,026	0.5134	3,093.7	2,524
18	3,167	0.4936	1,563.2	961
19	1,270	0.4746	602.7	359
20	527	0.4564	240.5	118
21	191	0.4388	83.8	34
22	62	0.4219	26.2	8
23	20	0.4057	8.1	
24	0			
25				

This is the present value of the benefit to the unit insured and therefore represents the smallest single premium that will still make possible the growth to one at time of replacement of unit. To adopt the above equation for computation, we multiply both numerator and denominator by v^x thus

$$A_x = \frac{v^{x+1}\, d_x + v^{x+2}\, d_{x+1}\, v^{x+3}\, d_{x+2}}{V^x L_x}$$

Let us now define $v^{x+1}d_x$ as C_x and $V^{x+2}d_{x+1}$ as C_{x+1}, etc., and the sum of $C_x + C_{x+1} + C_{x+2}$, etc., to table limit as M_x; and the product of $V^x L_x$ as D_x, $V^{x+1}L_{x+1}$ as D_{x+1} etc., to table limit. Then we have

$$A_x = \frac{C_x + C_{x+1} + C_{x+2}, \text{ etc.}}{D_x}$$

$$A_x = \frac{M_x}{D_x}$$

The expressions C_x, M_x and D_x are called commutation symbols and are used only for convenience. They are usually tabulated in columns along with the other columns of the mortality table. To find the value of an assurance, it is thus only necessary to divide the value in the M_x column opposite the given age by the corresponding value in the D_x column.

We are not interested, however, in single payment assurance like the above. We are interested in that form of insurance in which the payments are made annually during life. Let P_x denote the value of this annual payment. If the payments are made so that the first payment falls due at the end of the first year of service of the unit, the present value of the group of

payments or annuity, as such a group is technically called, is given by

$$P_x \cdot a_x = A_x$$

This equation shows the equality between the present value of the annuity and the present value of a single payment assurance. From the above

$$P_x = \frac{A_x}{a_x}$$

This expression can be greatly simplified and made workable by two substitutions for,[1] $A_x = \dfrac{M_x}{D_x}$ and $a_x = \dfrac{N_x}{D_x}$.

[1] If the different instalments of a life annuity of L were certainly payable, their present value would be represented by $v + v^2 + v^3$, etc., but as the respective payments only become due in the event of the unit being in service, each term must be multiplied by this probability. If, therefore, the probability of a unit aged x living one year be presented by px, of its living two years by $2px$, and so on, the value of a life annuity of L will be,

$$vpx + v^2 2px + v^3 3px + \text{etc.}$$

To find the value of this series, which continues until the limit of life is reached, let the value of the life annuity of L be represented by the symbol a_x thus,

$$a_x = vpx + v^2 2px + v^3 3px + \text{etc.} \quad \text{But } px = \frac{L_{x-1}}{L_x}$$

$$a_x = \frac{vL_{x+1}}{L_x} + \frac{v2L_{x+2}}{L_x} + \frac{v3L_{x+3}}{L_x} \text{ etc.}$$

$$a_x = \frac{vL_{x+1} + v2L_{x+2} + v3L_{x+3}}{L_x} \text{ etc.}$$

If the numerator and denominator of this fraction be multiplied by v^x, which of course in no way changes the value of the fraction, we have

$$a_x = \frac{v^{x+1}L_{x+1} + v^{x+2}L_{x+2} + v^{x+3}L_{x+3} + etc.}{v^x L_x}$$

If we now define $v^x L_x = D_x$; $V^{x+1}L_{x+1} = D_{x+1}$ etc., we have

$$a_x = \frac{D^{x+1}D^{x+2}D^{x+3} + \text{etc.}}{D_x}$$

Now, if we define the sum of the series in the numerator, thus,

$$D^{x+1} + D^{x+2} + D^{x+3} + \text{etc.} = N_x, \text{we have}$$

$$a_x = \frac{N_x}{D_x}$$

Accordingly when D_x and N_x columns have been constructed, the value of the life annuity at any age can be readily found by dividing the amount in the N_x column by the corresponding value of D_x. It is to be noted the N_x is formed by summing the D_x column from age $(x + 1)$ upwards.

Whence, substituting these equivalent values:

$$P_x = \frac{A_x}{a_x} = \frac{M_x \cdot D_x}{D_x \cdot N_x} = \frac{M_x}{N_x}$$

We may, therefore, compute directly from the M table and the N table the value of the annual depreciation payments payable annually until the unit is replaced.

VI

To interpret the methods used in the calculations of the net single allowance and the net annual allowance, the following illustration is used. Assume that an operating company owns 100 poles all of age 10; also assume that the company awakens to the fact that it must provide such reserves for these poles that at the time of their going out of service enough money will be at hand to replace them.

Also assume that the poles cost $10 a piece and that the limit of life of the poles as obtained from experience data is 13 years; that of these 100

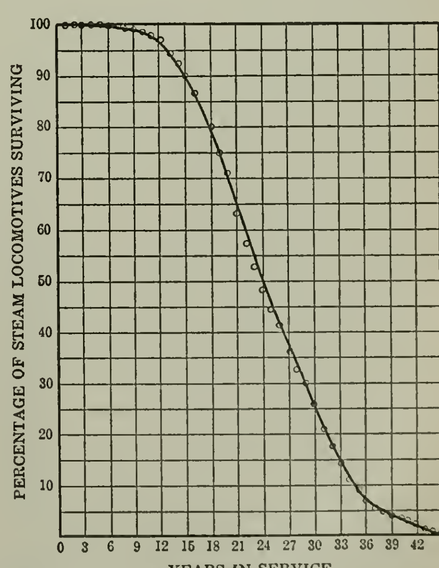

FIGURE 5. SUMMARIZING EXPERIENCE OF 781 STEAM LOCOMOTIVES

Table 24. Mortality Table

x	$M_x = \Sigma C_x$	$N_x = \Sigma D_x$	$P_x = \frac{M_x}{N_x}$
0	68,831.4	703,081	0.09787
1	68,382.4	607,380	0.11277
2	66,795.0	516,948	0.12921
3	63,175.4	433,617	0.14569
4	58,309.0	358,348	0.16272
5	52,738.2	291,545	0.18089
6	46,873.4	233,176	0.20102
7	40,766.1	183,158	0.22257
8	34,911.7	140,915	0.24775
9	28,955.1	106,253	0.27251
10	23,507.2	78,375	0.29993
11	18,923.6	56,442	0.33527
12	14,678.2	39,596	0.37069
13	11,208.0	26,867	0.41717
14	8,466.1	17,368	0.48745
15	6,265.3	10,436	0.60035
16	4,416.4	5,618	0.78608
17	2,877.2	2,525	0.13970
18	1,466.0	961	0.52540
19	565.7	359	0.57750
20	226.6	118	0.91800
21	79.2	34	0.30900
22	24.8	8	0.06000
23	7.8		
24			

poles 20 go out of service in the eleventh year, 30 in the twelfth year, and 50 in the thirteenth year. Since each pole is worth \$10 the company must provide, \$10 × 100 = \$1000. But only \$200 of this amount is due at the end of the eleventh year, \$300 at the end of the twelfth year, and \$500 at the end of the thirteenth year. The company therefore will not need to set aside at the beginning (beginning of the tenth year) as a single allowance, \$10 per pole, because only a part is to be demanded each year, and the sum paid in will increase by its interest earnings. Assume that 4 per cent can be earned. The \$200 demanded at the end of the first year need not be collected in full because \$0.9615 set aside for one year will amount to \$1.0000 at the end of the year. The present requirement will be only \$200 × 0.9615 = \$192.30. Likewise the 300 demanded at the end of the twelfth year will have had 2 years to accumulate interest, and will therefore have a present value of 300 × 0.9245 = \$277.35. In a similar manner the present value of the sum required at the end of the thirteenth year will be only 500 × 0.8889 = \$444.45. The total of the present value of these three sums is \$914.15. Therefore only $\frac{914.15}{100}$ = \$9.14 need be set aside as a single allowance to secure a pole against replacement. It is exactly this process which was used in the computations of the values of A_x for the pole data, Tables 21 and 22. The commu-

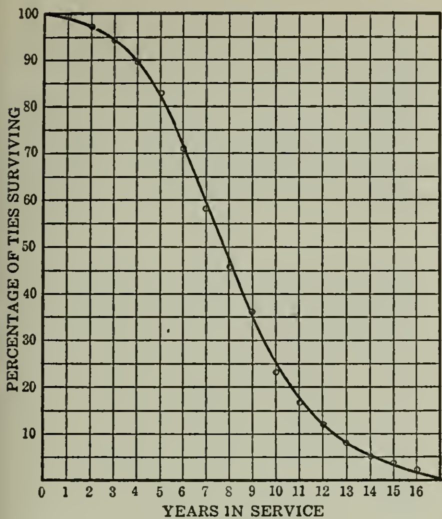

FIGURE 6. SUMMARIZING MORTALITY EXPERIENCE OF 440,009 CROSS TIES

tation columns and other columns used in the calculations are also shown in the tables.

In the calculation of life annuities the cardinal point to be kept in mind is that their sum must always be equivalent in amount to the net single allowance.

A necessary step that must precede the calculation of whole life allowances is the calculation of a life annuity. An annuity is the payment of a stated definite sum at the end of each year that the unit survives. The value of the annuity is the sum that the company must receive in order that it can make its annual payments at the end of each year. The annual allowance is ordinarily the small annual sum or depreciation charge, which the company receives in order that it may replace the unit when it goes out of service, but an annuity may be conceived of as being a large allowance given to the company in order that it may pay for the unit in small equal annual instalments.

The value of such an annuity is calculated in the same manner as a single allowance. Reverting again to the example of 100 poles of age 10, of which 20 are replaced in the eleventh year, 30 in the twelfth year, and 50 in the thirteenth year, let us determine what the single allowance per unit should be in order that the company may hypothetically pay $1 to each of these poles at the end of each year that they survive. Manifestly, $80 will be required at the end of the first year since only 80 units survive; $50 will be required at the end of the second year because only 50 survive. At the end of the third year, (or thirteenth year) no units survive and so no payment need be made. The payments of $80 and $50 have the benefit for 1 and 2 years of interest respectively. Therefore the present worth of the two payments is:

$$
\begin{aligned}
80 \times 0.9615 &= 76.92 \\
50 \times 0.9245 &= \underline{46.22} \\
& \$123.14
\end{aligned}
$$

which is the amount that the company must receive *now* in order that it may

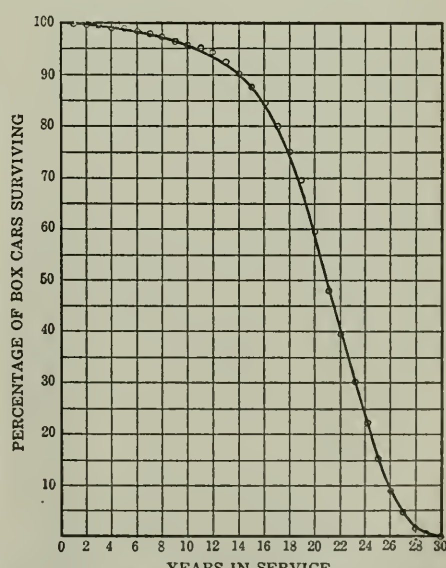

FIGURE 7. SUMMARIZING EXPERIENCE OF 8,788 BOX CARS

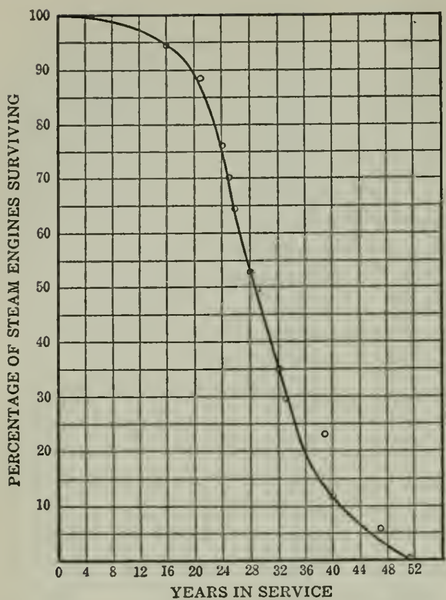

Figure 8. Summarizing Mortality Experience of Steam Engines Used in the Chicago Water Works System

pay the hypothetical annuity to each of the surviving units. This sum divided by 100 units gives $\frac{123.14}{100} = \$1.23$ as the amount apportioned per unit.

This annuity is calculated in order that the net single allowance may be changed to a net annual allowance. It was observed that at age 10 the sum of \$1.23 will purchase an annuity of \$1. Therefore \$9.14, the net single allowance, will purchase as many dollars of an annuity as \$1.23 is contained in \$9.14 or \$7.42. That is, \$7.42 received at the end of the tenth year and at the end of every consecutive year which the unit survives is the equivalent of \$9.14 paid now.

Thus the net allowance \$7.42 is on the whole life plan at age 10, which will insure the unit against replacement. By reference to Tables 23 and 24, it will be seen that this is the identical process that was used in the calculation of the single annual allowances for the 100,000 units of telephone equipment.

We have thus computed in Table 24 the annual allowances that the company must receive in order that the company may be able to make the

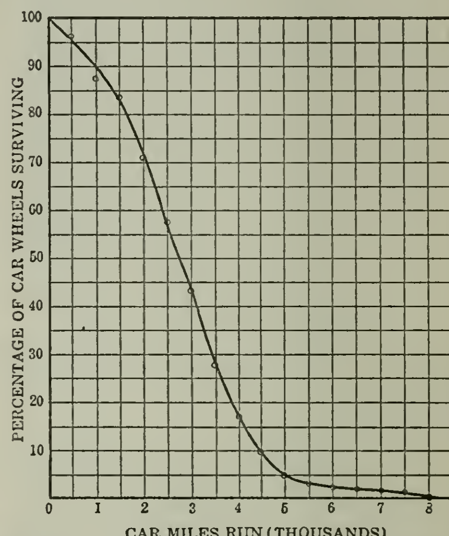

Figure 9. Summarizing the Experience as to Life of Cast Iron Wheels

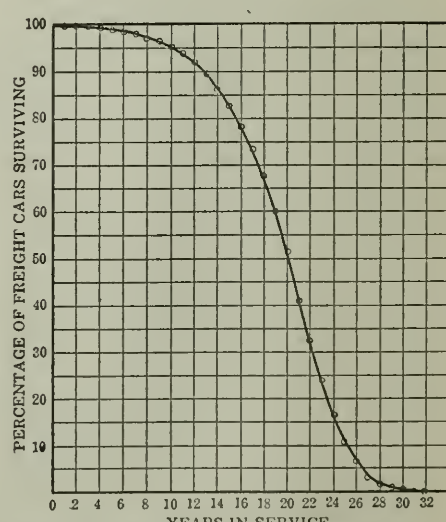

Figure 10. Summarizing Experience of 15,372 Freight Cars

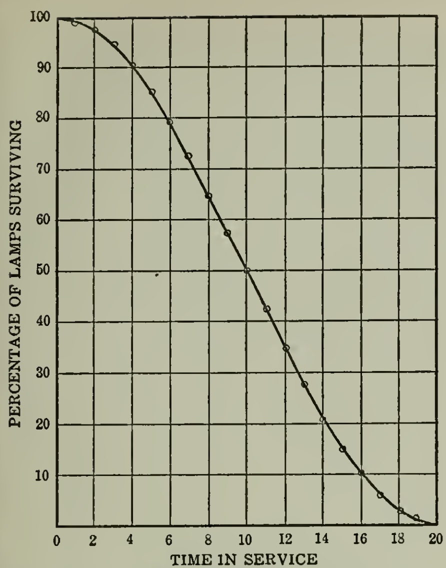

FIGURE 11. SUMMARIZING EXPERIENCE OF THE IMMORTALITY OF LAMPS OBTAINED FROM PERIODIC INSPECTION

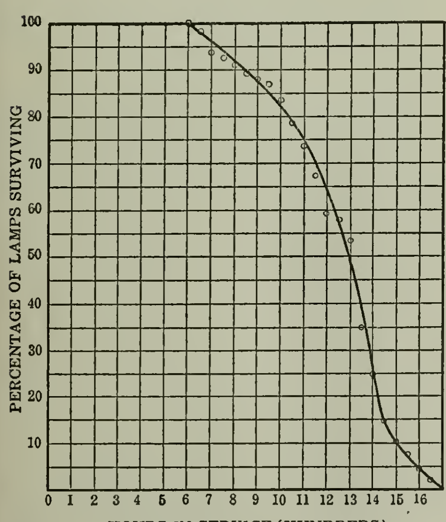

FIGURE 12. SUMMARIZING THE MORTALITY EXPERIENCE OF ABOUT 75–40 WATT, MAZDA INCANDESCENT LAMPS

annual replacements. To determine the amount of the total depreciation allowance one need only sum up the individual allowances for each of the units in the plant. The depreciation allowance computed in this way will scientifically and satisfactorily safeguard the capital assets of the plant.

It is interesting to note in this connection that an insufficiency in the number of units of one kind is no disadvantage; except in a small plant, for although there may not be a large number of units of any one kind, there always are a few units of each of many different kinds. Thus it can quite reasonably be assumed that a compensation will be effected. The company that must replace these units is not receiving only a few annual allowances, which would be a dangerous thing, but it is receiving an allowance from each unit it owns. It is this fact that takes the danger element out of the method.

It is well known that an insurance company need not insure a large number of people of a given age in order that it may be secure. It is highly important, however, that it insure a *large* number of people, irrespective of age. As a matter of fact an insurance company will be safer if the insured people are not of the same age. There are diseases which are peculiarly likely to afflict people of certain ages. Therefore, if the people insured by an insurance company should all be of the same age and a disease should cause the death of all, the insurance company would be wrecked. On the other hand, if the company had insured people of different ages, such a large loss would not have been possible. In a similar manner we can explain why it would be safer for a company to have a few units of a given type than to have many. Suppose a company owns only street cars. A new invention or a new city ordinance might require the replacement of the company's entire property. This would simply mean that the company would become bankrupt.

Then too, there is at present a strong movement toward consolidation. Small privately owned and controlled companies are becoming less numerous year by year. Companies are beginning to own more and more units of a given type as time progresses.

VII

When the insurance is first effected, the value of the net payments to be made should be exactly equal to the assurance granted. It was on this hypothesis that all the derivations for annual payments have been based. The present value of the payments for an assurance of L on a unit aged x is $P_x \cdot a_x \cdot$ and the value of the assurance is A_x, so that at the beginning we have the equation

$P_x \cdot a_x = A_x$ for ordinary whole-life period.

At this period the policy has no reserve value because no payments have yet been made. After m years have elapsed, however, A_x will have become A_{x+m} and $P_x \cdot a_x$ will have become $P_x \cdot a_{x+m} \cdot A_{x+m}$ has become larger because the time at which it will become payable is m years nearer than it was originally. And on the other hand the present value of the future payments has decreased from $P_x \cdot a_x$ to $P_x \cdot a_{x+m}$.

The liability to pay the assurance is no longer covered by the present value of the annual payments, but is balanced or offset by the value of the remaining payments and the reserve value, thus,

$$P_x \cdot a_{x+m} + \text{Reserve Value} = A_{x+m}$$

Or, solving for Reserve Value, we have

$$\text{Reserve Value} = A_{x+m} - P_x \cdot a_{x+m}$$

This expression represented in commutation symbols becomes,

$$\text{Reserve Value} = \frac{M_{x+m}}{D_{x+m}} - \frac{P_x \cdot N_{x+m}}{D_{x+m}} = \frac{M_{x+m} - P_x \cdot N_{x+m}}{D_{x+m}}$$

This formula can then be used for the calculation of the amount of replacement insurance reserve which would have been accumulated had there been set aside from the beginning proper replacement premiums or allowances. It is clear that at the beginning of the life or use of a property this reserve is zero. No payments have been made into it. It is also evident that as the property approaches the limit of its useful life the replacement insurance reserve becomes equal to the original cost of the property or equal to the amount of assurance. Furthermore, it may be said from a theoretical standpoint that during the interval of time between zero and maximum life in service the difference between the original cost of the property or the amount of the assurance and the amount of replacement reserve is the *present value* of the property.

This opens up a new means of present-value determinations. One need

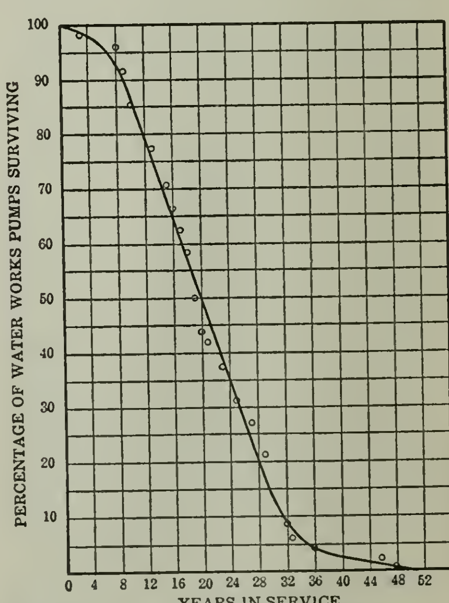

Figure 13. Summarizing Experience as to Complete Life in Service of 48 Water Works Pumps

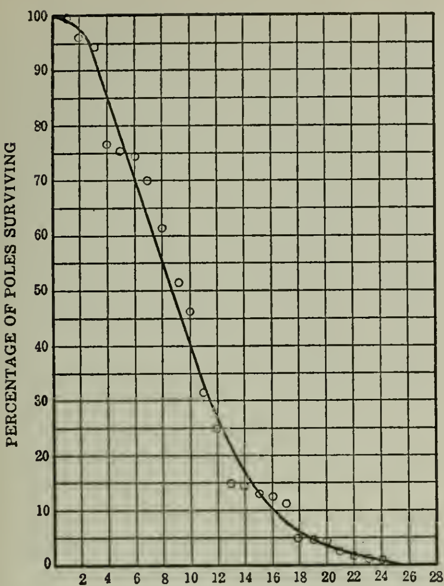

FIGURE 14. SUMMARIZING THE EXPERIENCE OF 1372 WOODEN POLES OF THE ELECTRIC COMPANY OF MISSOURI

only determine the value of the original investment and then calculate the amount of the replacement insurance reserve, and one has the present value of the property. It may be said that such a procedure is highly theoretical. In fact present values obtained in this way will not agree with the present values obtained by a consideration of future life expectancy. This fact, however, is not so important provided the reserve is considered a part of the property itself. In other words, the reserve must not be thought of as being owned by the investors, but it must be thought of as a portion of the physical property itself.

Under these conditions it makes no difference to the purchaser of the property in case of a sale, for he not only purchases the property but he also receives the reserve fund, the total of which plus present value of the property is the original cost. Neither does it make any difference to the seller for he too receives in return what he had originally invested in the property.

VIII

As has been stated several times, from a scientific standpoint a mortality table should be obtained for each kind of utility equipment. In this way the closest agreement with the laws that govern different types of equipment would be insured. Evidently this method of procedure would make it impossible to use the Replacement Insurance Method for some years to come, for it is practically impossible to obtain sufficient data of every individual type of equipment at the present time.

In this connection it is, however, indeed interesting and instructive to note that the mortality laws that govern one type of equipment are indeed very nearly the same as those that govern many other types. To illustrate this fact Figure 22 has been pre-

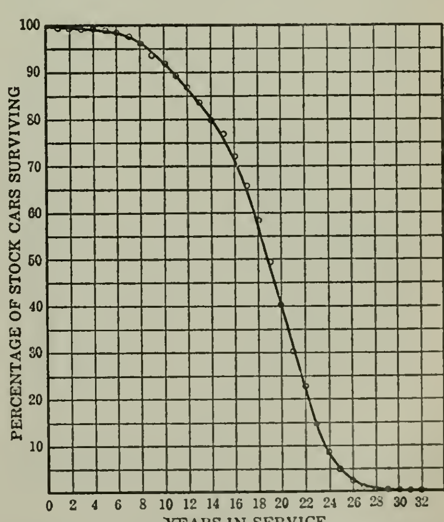

FIGURE 15. SUMMARIZING THE EXPERIENCE OF 3351 STOCK CARS ON THE U. P. R. R. AND C. B. AND Q. R. R., C. R. I. AND P.

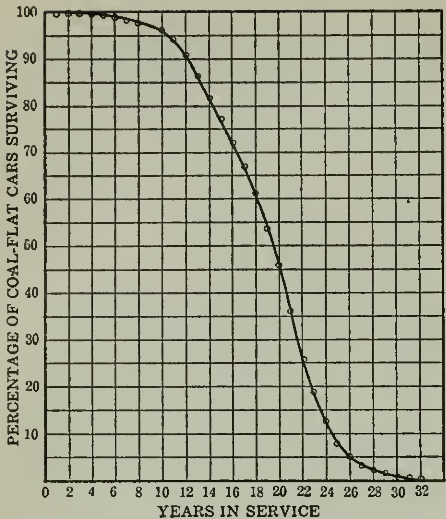

Figure 16. Summarizing Experience of 2712 Coal-Flat Cars

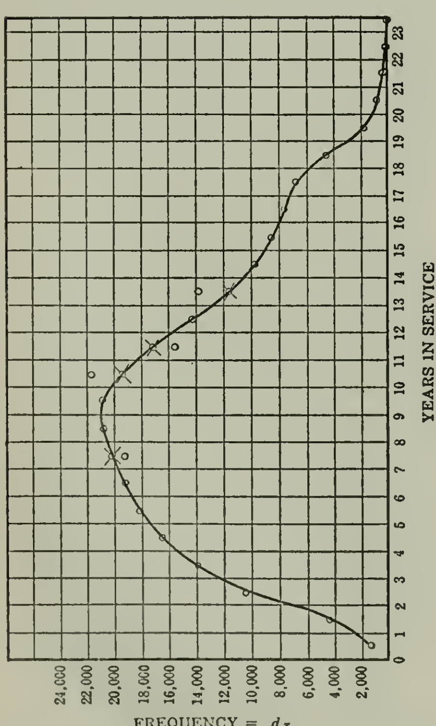

Figure 17. Smoothing a Mortality Table by Means of the Graphic Method

pared, on which are plotted several mortality curves. Percentages of L_x and age are used to make a direct comparison possible. The curves shown represent a variety of equipment.

Figure 22 quite strikingly portrays what reasonably could have been anticipated, namely, the assumption that the life of all kinds of equipment is controlled by the same type of force. The curves all have the same tendencies; they drop off slowly at first, then more rapidly, and in the latter years they again drop off slowly. Of course, it must be admitted that the data presented are perhaps not sufficient to draw conclusions from. The data in the first place may have been carelessly compiled. The figures used for maximum life in any one table may not be correct and thus greatly affect the slope of the curve. Such an inaccuracy has the effect of shearing the curve.

The fundamental truth, however, remains. Great similarity in mortality experience for different types of equipment can be expected.

This conclusion makes it permissible to obtain an "Average" mortality

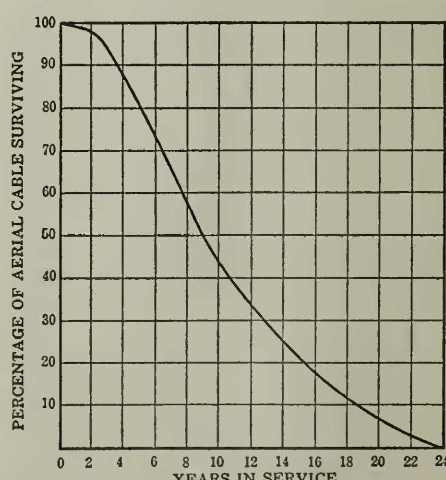

Figure 18. Summarizing the Experience of Aerial Cable Valued at $386,910

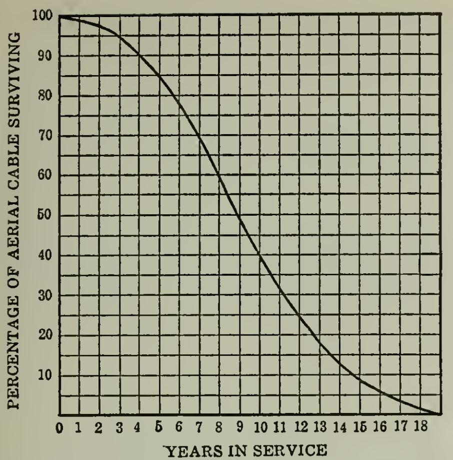

FIGURE 19. SUMMARIZING THE EXPERIENCE OF AERIAL CABLE VALUED AT $323,890

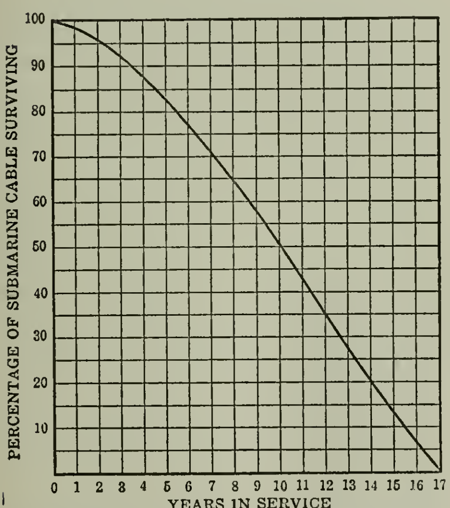

FIGURE 20. SUMMARIZING THE EXPERIENCE OF SUBMARINE CABLE VALUED AT $330,332

curve which could be assumed to hold for all types of equipment. Such an *a priori* application would reduce the amount of statistical computation.

Although such an *a priori* application would seem to be the logical solution of the problem, the writer at the present time does not recommend it.

As soon as enough data have been collected to vindicate the assumption

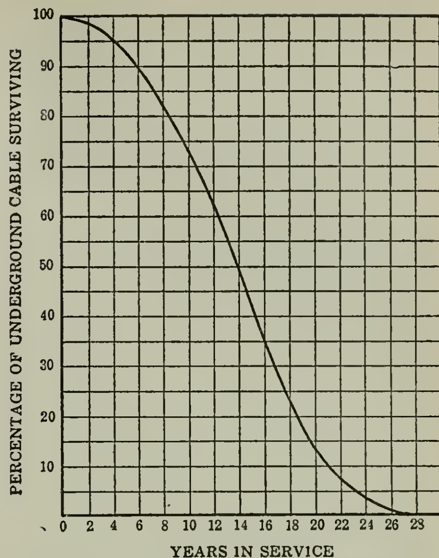

FIGURE 21. SUMMARIZING THE EXPERIENCE OF UNDERGROUND CABLE VALUED AT $1,433,484. CABLE WAS MAIN CABLE EXCLUSIVE OF COARSE GAUGE

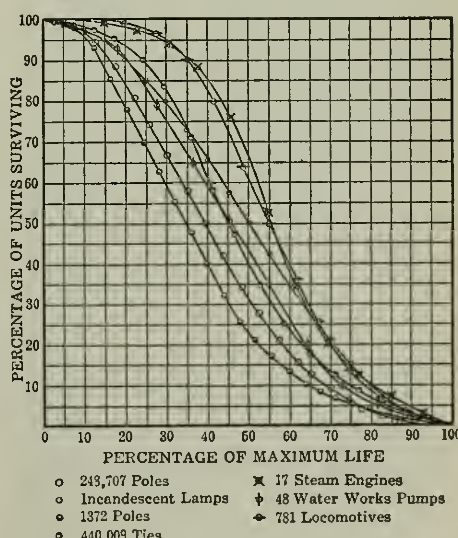

FIGURE 22

that the mortality of equipment of all kinds is controlled by the same force, an average of mortality experience could be obtained, which could then be used in an *a priori* application.

SOME ACCOUNTING PROBLEMS OF THE MOTION-PICTURE INDUSTRY

BY MAX E. PRAGER*

IN view of the rapid and comparatively recent development of the motion-picture industry it is not surprising that slow progress was made in stabilizing accounting and financial methods. Moreover, there were certain peculiarities of the business, which made special accounting methods necessary. These peculiarities were the large overhead during the period of idleness between the production of pictures, the depreciation of films, the fact that the film, instead of being sold outright as is generally the case with manufactured products, is leased out for a rental consideration.

Now that methods have been devised to meet these special requirements accounting procedure is becoming more uniform.

The motion-picture industry may be divided into three elements: producing, distributing, and exhibiting. These terms may be defined as follows: producing is the actual making of the picture; distributing, the commercialization, marketing, and leasing of the picture; and exhibiting, the actual presentation to the public.

In a great many instances one company performs both the producing and the distributing functions and in some cases, all three. Either case is found only where large capital is available. Within recent years the functions of producing and distributing, have been separated, independent and distinct organizations being maintained to cover each field. The distributing organization may be forced to adopt this arrangement owing to a lack of available capital to finance productions. It frequently happens, however, that the so-called independent producer has or can obtain the capital to distribute his productions, but releases them through the distributing organization because returns are greater when only production is undertaken than when combined with either distribution or with distribution and exhibition. In many cases the stock of the distributing organization is owned by a body of producers who have formed the organization primarily for the purpose of self-defense, as well as to obtain better prices for their product. In such cases, the distributing organization retains a percentage of the rentals from the leasing of the pictures to cover the cost of operation, and in addition a small margin of profit, the latter reverting to the producer through his stock ownership. In rough outline, these are the prevailing methods of doing business in the industry today.

Though the general accounting problems are to a very great extent the same as those prevalent in other manufacturing industries there are peculiarities of the motion-picture business to which methods of accounting must be made to conform.

One of these peculiarities, giving rise to a special accounting problem, is the matter of overhead. Overhead is somewhat more accentuated in this industry than in others, owing to the fact that except for some of the largest producing companies, there is usually a period of idleness between the production of pictures. In this industry,

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as in others, certain groups of employees are retained during a period of inactivity to preserve at least the skeleton of the organization. These groups in the motion-picture industry usually comprise property men, scenario writers, directors, cameramen, etc., whose salaries when the manufacturing processes are in motion, are chargeable to manufacturing cost, but during periods of inactivity are added to the overhead.

II

This problem of unproductive overhead is solved in several ways. Where the number of pictures to be produced in the coming year is determined and the probable time to be consumed in the making of each picture is scheduled out in advance, the overhead during the period of idleness is apportioned to each picture on the basis of the time taken in its production to the total time devoted to production during the year. This method is rather crude and inaccurate, as the production of the picture may consume a period longer or shorter than scheduled, or there may be a curtailment or increase in the number of pictures to be produced. In the making of pictures, more so than in the production of machine-made commodities, the sole and exclusive problem lies in directing human beings. Screen artists cannot be handled and operated as machines or automatons. Personalities, moods, and temperaments must be reckoned with. These affect not only the time, but also the cost of production.

In some cases, the overhead during idleness is added to the subsequent picture and in other cases it is divided equally between the preceding and subsequent pictures. Very little need be said regarding these methods, as there is neither rhyme nor reason for their existence.

The only correct method in the opinion of the writer is to isolate the cost of idleness and not attach it to the cost of specific productions, the object of keeping this cost isolated being the same as in other manufacturing industries; i.e., to have on hand at all times the cost due to lack of output.

Some may inquire, if the unproductive overhead is not apportioned, how the proper sales prices can be fixed. In the motion-picture industry, however, costs have practically no bearing upon the sales or rental value. This is usually fixed at what the traffic will bear, based upon the merit of the preceding productions. Costs when used at all, are mainly for public consumption and sales arguments, and are in most cases pure fabrications.

Another interesting problem which confronts the motion-picture industry is how to write off the depreciation of the films or finished products. The cost of pictures ranges from tens of thousands of dollars to hundreds of thousands of dollars, virtually in some cases the cost of a good-size industrial plant.

Pictures to a producer are his stock in trade and while subject to depreciation or extinguishment, as fixed assets are, should not be confused with the latter. Pictures, unlike machinery, are not used for the purpose of manufacture. They are manufactured products just as much as products manufactured with the aid of machinery. The distinction between the two kinds of products is, that the manufactured product, except in a few cases, is sold outright, whereas the picture is leased out for a rental consideration. The life of fixed assets can be approximated fairly, and in every case expenditures so termed should have lives of more than one year from their dates of installation.

This same degree of approximation is not susceptible in the motion-picture

industry. Except in a few instances, a picture rarely has a commercial value after the first year of public presentation. The reason for this is twofold. First, the value of the picture is purely speculative, depending upon its quality and the very changeable fancy of the public; and second, the picture is exhibited around the various circuits in a short time. Generally, the larger circuits are exhausted quickly after proper exploitation and advertising, as it is always most advantageous to show the picture while the subject is still new and fresh in the minds of the public. This partially overcomes some of the risks in the marketing of films, but is, on the other hand, the factor which, to a great extent, determines the commercial life of a picture.

It seems fairly certain that the cost of a picture should be depreciated within a period of twelve months from the date of its first public presentation. If the picture is a failure the cost should be depreciated in a shorter period.

A problem of depreciation rates arises in preparing financial statements covering periods of less than twelve months. The lessening of the value is greatest at the beginning, as the greatest returns are received from the exhibitors presenting the picture soon after it is released. When the larger circuits are exhausted the picture is released through exhibitors, who pay practically a nominal rental.

There is no strictly accurate and scientific basis for determining a periodical rate of depreciation. Perhaps as good a method as any is to estimate conservatively the probable total income to be received from the use of a picture—this is not particularly difficult, as past experiences may be used in making such estimates—and to depreciate such proportion of the cost as the income from the picture during any period is to the estimated total income. It may be found that revenues will be received after the entire cost is depreciated, but that condition can hardly be avoided. Another method often used is to set arbitrary percentages of depreciation, highest during the early period and gradually tapering off until the entire cost has been extinguished.

The manner of accounting for income follows the requirements of the business, differing somewhat from that of other industries. Where the product of a producer is distributed through other organizations, it is customary for the producer to receive advances on the cost of the picture or a certain guarantee to be applied towards his portion of the rentals derived from the distribution of the picture. In some cases, the picture is purchased outright for a specified and final amount. The latter case requires no comment, as the full amount received becomes income, which is reduced by the cost of the picture.

The amounts received on account of the cost and also the guarantees should be considered a liability. The distributing organization usually submits to the producer a weekly statement listing the theaters that have shown the picture during the week and the rentals received therefrom. This total is then divided between the producer and the distributor according to the agreed percentage. This in reality constitutes earned income and should be carried to the statement of income. Of course, the percentage accruing, will not be paid to the producer until it cumulatively exceeds the advances and guarantees paid to him.

The relation between the distributor and exhibitor of renting pictures is practically in all cases reduced to contract, no matter how small the amount involved. The universal custom in closing a contract with an

exhibitor is to receive a deposit thereon, or the entire amount of the rental upon signing of the contract, or the full rental from seven to ten days before the film is shipped. In any event, the full amount of the contract is paid by the exhibitor before he receives the picture. The custom of granting credit to customers is unknown in the motion-picture industry.

III

With many distributing concerns the contract is the foundation of the revenue accounting. The sum of the contract value represents the business taken and is credited directly to income and charged to customer's account. This method would be comparable to that of a commercial house if it credited income with orders taken by salesmen before goods are shipped.

Some concerns justify this procedure on the grounds that the expense has been incurred in obtaining the business and, therefore, the benefits derived therefrom should be credited to income. Those who favor such a course do not care to show on the balance sheet, a liability for moneys received in advance of fulfilment of the contract on their part to deliver a picture. Not to show such liability, however, is a gross error of misstatement. A balance sheet should show such an important statement of fact, as on occasions, the moneys received in advance of the actual delivery of the film to the exhibitor may amount to hundreds of thousands of dollars. There can be no income until the conditions of the contract on the part of the distributor have been fulfilled, i.e., until the picture has been delivered. If it is desired to carry forward expenses applicable to unfilled contracts, the expenses should be estimated. It is better, however, not to do so but to absorb the expenses in the year in which incurred.

The correct method of revenue accounting is to record a liability for the contracts taken representing an obligation of the distributor to deliver films, and to charge customers representing an obligation of the latter to accept and pay for films. As cash is received, exhibitors should be credited. As the films are delivered, the liability should be reduced and income credited, thereby bringing into the income account only such rentals as have been actually earned. On the balance sheet, it is desirable to break up the liability into two parts; one, showing the pictures paid for but not delivered, which would be the excess of the liability over the outstanding customers' accounts; the other, showing the pictures not paid for and not delivered, representing the balance of the customers' accounts.

As to the exhibitor, only two points need be mentioned as affecting his accounting. A suspense debit should be recorded for contracts made representing claims against distributors to deliver pictures and a liability on the part of the exhibitor to accept. As stated before, the exhibitor pays for pictures before they are delivered to him. Such sums should be shown as special deposits and absorbed into expenses as pictures are received. The suspense debit and liability should be concurrently reduced as pictures are received.

In this article it will be noted that only the broad aspects of the larger accounting problems in the motion-picture industry have been presented, no effort being made to discuss in detail all possible solutions. Once, however, a clear understanding is gained of what is required by the industry, detailed methods to fit individual cases can easily be devised.

THE FINANCIAL BUDGET

BY JAMES O. McKINSEY*

FUNDS are required to finance the operations of all the departments of a business. The operations of the departments necessitate the use of services and supplies, and the purchase of these involves the expenditure of funds. As a result of the operations of the several departments, a service or a commodity is purchased or produced, and this commodity or service is sold. From these sales, funds are received either immediately or at the expiration of the period of credit which is granted to customers. In addition, some funds are received from other sources than the sales of merchandise. Stocks or bonds may be sold, and notes may be issued to banks or others for cash. It can be seen, therefore, that the operations of a business result in the constant receipt and disbursement of funds. These funds are in the form of cash or its equivalent. Since a business cannot continue to operate unless it is able to pay its obligations, it is necessary for its operations to be planned so that its cash receipts will be equivalent to its cash disbursements.

The ideal financial program would be one which provided for the receipt each day of the same amount of cash that must be disbursed on that day. It is impossible to make plans which are sufficiently exact, to make possible such a schedule of receipts and disbursements; and so it is necessary to maintain a "cash balance" which will insure against a discrepancy between the cash receipts and the cash disbursements. The custody of the cash receipts, the maintenance of the cash balance, and the control of the cash disbursements, are among the most important functions of a business. To accomplish these functions, it is necessary that the cash requirements of a business be determined in advance and also, that well-formulated plans be made for the satisfaction of these requirements.

In the past most business executives have prepared their estimates of financial requirements on the basis of the requirements of previous years, taking into consideration in a rough way such factors as the amount of business expected for the coming year, business conditions, and any plans that may be under way for the extension of plant, equipment, etc. The method by which these factors have been taken into consideration is, perhaps not improperly, to be described as "expert guesswork" in the majority of cases. The length of time for which any such estimate is made will depend on the conditions in the particular line of business in question, though, in the past, six months and a year have been the most usual periods.

Such a plan as this is about all that is possible where there has not been established a thorough-going departmental budget system under which each department makes up a formal estimate of requirements and possible achievements to be organized into a single consistent plan for the budget period by the chief executive in consultation with the departmental heads. But where such a budget system is in existence, each departmental budget can be made to show among other things the estimated cash require-

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ments and estimated cash receipts. It is important to bear in mind that all budgets from the point of view of executive control fall, roughly, into two classes, though the budget made up by any one department may be comprised of elements of both. One of these types is an estimate of requirements for conducting the activities of the department along the line proposed, that is, a requisition for supplies, materials, labor, equipment, etc. After it is approved, it is in the nature of an allotment not to be exceeded without permission. The other type is a statement of the proposed accomplishments of the department, a tentative promise to deliver materials, services, etc., which, upon being accepted as a part of the general plan of the business, comes to be a quota to be attained. That which from the point of view of one department is a quota, from the point of view of another is an allotment, and it is through this dovetailing of quota and allotment that a budget-system seeks to co-ordinate the activities of all the departments of a vast organization into a single unified policy.

Applying this distinction to the financial budget, each departmental estimate of cash requirements when approved comes to be an allotment of cash to that department. In the same manner a departmental estimate of cash receipts becomes a cash quota for that department. In many businesses the sales estimate is the only one which represents anticipated cash receipts.

Sometimes the financial budget is wrongly regarded as a departmental budget. From the foregoing discussion it can be seen that this is clearly erroneous. It is not a budget of the treasurer's department, but a combination of the budgets of all the departments. As a consequence, a financial budget must state the funds which are needed to finance all the activities of the business, and these activities are stated in the departmental budgets. In the past, some business firms have attempted to make a financial budget without making careful departmental budgets. This has resulted in unsatisfactory results for the two reasons here given:

1. The financial budget cannot be made accurately without making the other budgets.

2. It is necessary to control the activities of the various departments in order to enforce or carry out the financial budget, and this can be done only through the departmental budgets.

II

In estimating the cash receipts of a business, it is necessary to determine all sources from which cash may be obtained. The number and nature of these sources will depend on the nature of the operations of the business. In a mercantile or industrial business the principal source of cash receipts is its sales. At the beginning of any budget period, there will be certain accounts receivable outstanding, from which funds will be received during the budget period, and there will be additional accounts receivable resulting from the sales during the period from which collections will be derived. In a retail store there will also be receipts from cash sales.

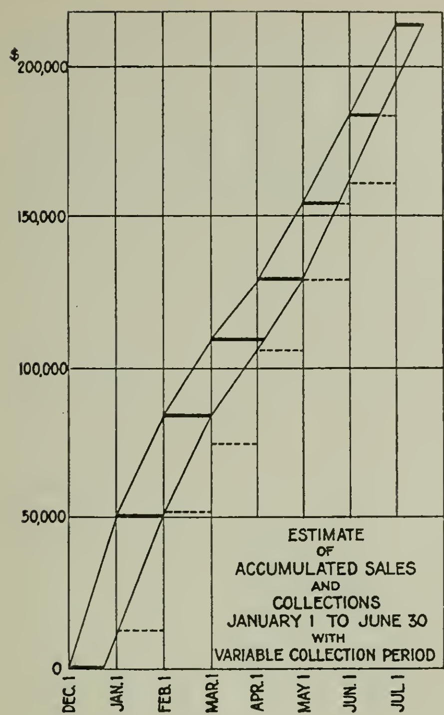
The method to be employed in estimating the receipts from accounts receivable and sales, depends on the number of customers and the terms on which they are sold. In a small business or in a business which has few customers, it is possible to take each customer and estimate the amount which will be obtained from the accounts which he owes at the beginning of the budget period and also the amount of sales which will be made to him during

the budget period and the collections which will be made from the accounts receivable arising from these sales. In a large business which has many customers this method is not practical. The method to be followed will depend largely on the terms on which the sales are made. In a retail store, for instance, a considerable part of the sales are for cash. The sales on account are due at the end of the month, and presumably are paid during the first few days of the following month. Consequently it is necessary to classify the sales as cash sales and sales on account. The former will result in cash receipts for the month in which made, while the latter will result in cash receipts during the month following the one in which they are made. In some businesses sales are made on terms which result in the payment for all the sales of each month on the same day. For instance, a customer may be sent a statement at the end of each month for his purchases during the month, and he may pay on the fifteenth of the following month. In such cases it is not difficult to estimate when the cash receipts from the sales will be obtained.

If a business sells on terms such as 1/10, n/30; 1/20, n/60, etc., which result in the receipt of payments throughout the month, it is necessary to resort to ratios to estimate the cash receipts from the estimated sales. A study of past records will show in most businesses that there is a fairly uniform ratio between sales and collections. This ratio may vary during different months or seasons of the year, and it may vary during different years owing to trade and market conditions. By careful study, however, it is possible to obtain a ratio which is approximately correct. After the ratio of collections to sales for past periods is obtained, this is applied to the estimated sales for each month of the next period to determine the estimated cash receipts for each month. The inaccuracies which may arise from this method are apparent. It, of course, will be understood that it is never possible to obtain exact estimates of cash receipts or disbursements. We carry a cash balance primarily to provide for these inaccuracies.

Another method of handling this problem was suggested by Morris A. Copeland in the December, 1920, issue of *The Journal of Political Economy.* At the writer's request, Mr. Copeland has submitted the following statement in explanation of this method:

One method of handling the problem is to calculate the average turnover or collection period, and use this directly as a lag on sales. The average turnover period of accounts receivable in fractions of a year is the average of accounts receivable at the end of each month divided by the amount of the collections for the year. In case this should prove to be one-twelfth, the sales estimate for March would be the collections estimate for April, etc. But if it were twenty days, instead of a month, the collections for May would be approximately equal to the sales from April 11, to May 11, a figure which cannot be obtained conveniently from the sales estimates if it states the sales by calendar months. Partly on this account and partly because the collections period may vary from season to season, and is sure to vary according to business conditions, the whole thing may be shown more easily graphically. It is evident that if the collections period varies, the collections for one month will not correspond to the sales during an interval of equal length. For a good mathematical reason which we need not go into here, it is best to show the sales and collections in cumulative form, i.e., to show the total sales from January 1, to each succeeding date. Form I illustrates the graphical method. The dates are shown in the horizontal scale (Sundays and holidays should be omitted); the amounts are shown on the vertical. This diagram is based on the following data:



Form I

Month	Sales Estimate	Estimated Collection Period[1]
December.........	$50,000.00	20 days
January...........	35,000.00	30 "
February..........	25,000.00	40 "
March............	20,000.00	35 "
April.............	25,000.00	30 "
May..............	30,000.00	25 "
June.............	30,000.00	20 "
	$215,000.00	

[1] The reader will realize that the length of the collection period will usually not vary as much as here shown. The wide variations were taken here to emphasize the variations on the graph.

The estimated collection period is measured from the first of each month, and is the horizontal distance from the sales graph at that time to the collections graph. The collections graph is obtained by connecting the right-hand ends of these horizontal lines. From it we can read off the collections estimate for any month, as January $37,500 and May $32,500

After the estimate of collections from sales is made, it is necessary to determine whether cash may be received from any other source. Interest may be received on bank balances and income may be obtained from investments. In some businesses there may be other sources of income. In any case, all these must be carefully considered and recorded on the estimate of cash receipts.

In a professional firm, the principal source of cash receipts is from the sale of services, and this estimate must be made in the same manner in which the estimate of receipts from the sale of commodities is determined in the commercial firm. In a financial institution there are still different sources of cash receipts, but the method of determining the amount to be received from these sources is similar to that discussed in connection with the mercantile and industrial firm.

In making up the estimate of cash receipts, a careful record should be made of the amount estimated to be received from each source so that at the end of the month, as well as at the end of each budget period, a careful comparison can be made between the estimated receipts from each source and the actual receipts, in order that the relation between the total receipts estimated and the total actual receipts can be determined. These comparisons are especially useful in the making of future estimates. A simple form of the estimate of cash receipts covering a period of three months is shown in Form 2.

III

After the estimate of cash receipts is prepared, it is then necessary to determine the estimated cash disbursements. In order to do this, it is necessary to prepare an estimate of the expenditures of every department of the business.

ESTIMATED CASH RECEIPTS
For Quarter Ending March 31, 1921

Source	January	February	March	Total
Accounts Receivable:				
Customers—Class A[1]............				
Schedule No. 1.................				
Customers—Class B............				
Schedule No. 2.................				
Customers—Class C............				
Schedule No. 3.................				
Notes Receivable:				
Not Discounted................				
Schedule No. 4.................				
Sales:				
Customers—Class A............				
Schedule No. 5.................				
Customers—Class B............				
Schedule No. 6.................				
Customers—Class C............				
Schedule No. 7.................				
Miscellaneous:				
Income from Investments.........				
Interest on Bank Balances........				
Total.....................				

Form 2

[1] The classification of customers into Classes A, B, and C is on the basis of the terms of sale.

A discussion of the various departmental estimates has been given in previous articles. A brief review will be given here to show the relation of these estimates to the estimate of cash disbursements.

The principal disbursements of a mercantile business are for merchandise purchases. The purchases budget, if prepared in the form explained in the April number of this magazine, will show the following information for each month of the budget period:

1. Inventory at beginning of month.
2. Estimated deliveries to stock during month.
3. Estimated orders to be placed during month.
4. Estimated inventory at end of month.
5. Estimated cash disbursements for purchases made during previous months.
6. Estimated cash disbursements for purchases made during the month.

Items 5 and 6 will be added for each month and entered in the "estimate for cash disbursements."

It is usually easier to estimate the disbursements for purchases than to estimate the receipts from sales. The purchases are made in large quantities, and, consequently, there are fewer creditors than there are customers. A business controls the payment of its liabilities and knows whether it will take its discounts or wait until the end of the credit period. It does not control the receipts from customers and can judge what they will do only by what the past indicates. After the purchasing department knows the purchases which must be made to meet sales demands, it should not have any particular difficulty in preparing the purchases budget so that it will show the information stated above.

The principal disbursements of a manufacturing business are for materials, labor, and manufacturing expenses. The method of estimating the amount of each of these and the form in which the estimate should be prepared has been discussed in connection with the "Production Budget." In estimating the disbursements for materials, a similar procedure to that followed in estimating the disbursements for the finished goods of a mercantile firm is necessary. First, the materials which are to be purchased must be determined, and then the date of payment for these purchases must be calculated. The disbursements for labor are ordinarily made during the same period that the labor is consumed. A large part of the manufacturing expense will consist of supplies which may be purchased in one period and paid for during the next period. Consequently, the disbursements for these must be determined in a manner similar to the disbursements for materials and finished goods. In a manufacturing business there will also be disbursements for manufacturing plant and equipment, and in all businesses there will be disbursements for furniture and office equipment. The preparation of the estimate for plant and equipment has been discussed in the May *Administration*.

After the expenditures are determined, which are necessary to obtain the goods needed to supply the sales demands and to obtain the plant and equipment required, it is necessary to estimate the expenditures which must be incurred in operating the business so as to secure the sales and deliver the goods to the customers. This requires the making of an estimate of selling expenses by the sales department, an estimate of administrative expenses by the executive office, an estimate of auxiliary expenses by each of the service departments, such as the traffic department, the personnel department, the purchasing department, etc. The content and form of these estimates have been discussed in the article on the "Expense Budgets."

In making up the estimate of cash disbursements a careful record should be made of the amount estimated to be disbursed for each purpose, so that at the end of the month, as well as at the end of each budget period, a careful comparison can be made between the estimated disbursements for each purpose and the actual disbursements; then the relation between the total estimated disbursements and the total actual disbursements can be determined. These comparisons are especially useful in the making of future estimates. A simple form of the estimate of cash disbursements is shown in Form 3.

IV

After the estimates of cash receipts and cash disbursements are completed

ESTIMATED CASH DISBURSEMENTS For Quarter Ending March 31, 1921				
Purpose	January	February	March	Total
Notes Payable:				
Accounts Payable:				
Outstanding, Jan. 1..............				
Estimated Cash Disbursements for.				
Purchases......................				
Factory Pay-roll:				
Department A..................				
Department B..................				
Department C..................				
Factory Expense:				
Department A..................				
Department B..................				
Department C..................				
Departmental Expense:				
President's Office................				
Treasurer's Department..........				
Auditor's Department............				
Purchasing Department..........				
Office Manager's Department				
Traffic Department..............				
Sales Department................				
Production Department..........				
New Equipment:				
General:				
Taxes..........................				
Insurance......................				
Interest.......................				
Miscellaneous..................				
Total..................				

Form 3

a statement can be prepared showing the relation of the estimated receipts to the estimated disbursements. If the disbursements exceed the receipts, the excess will usually be met by means of bank loans. If the receipts exceed the disbursements, the excess will usually be used in the reduction of bank loans contracted during previous periods when disbursements exceeded the receipts.

In determining the amount of the loans necessary or vice versa, the cash balance at the beginning of the period and the desired cash balance at the end of the period must be taken into consideration. The amount of the cash balance may be determined by what the firm has learned by experience is a necessary minimum, or it may be determined by the minimum requirements of the banks. Banks usually insist that the cash balance be maintained at a certain percentage of the loans obtained from them. Consequently as the loans at a bank increase, the cash balance must increase accordingly.

A simple form of statement which will show the information stated in the preceding discussion may be as shown in Form 4.

In the illustration it is assumed that the disbursements are such that loans are required. If the opposite situation exists, the last item on the summary will read "Loans to be Liquidated," instead of "Loans Required."

On the basis of the estimated cash receipts, as shown in Form 2, the estimated cash disbursements, as shown in Form 3, and the summary of financial requirements, as shown in Form 4, it is possible to prepare a statement showing the program to be followed with reference to bank loans. The possible contents of such a statement is indicated in Form 5.

A proper control of a financial budget requires (a) a proper control of the preparation of the estimates on which the financial budget is based, and (b) a proper control of the operation of these budgets so that the plans made will be fulfilled.

SUMMARY OF FINANCIAL REQUIREMENTS

For Quarter Ending March 31, 1921

	January	February	March	Total
Cash Balance at the Beginning of Month				
Receipts				
Total Disbursements				
Excess of Disbursements				
Cash Balance Desired at End of Month				
Loans Required				

Form 4

The estimates prepared by the departmental heads should be submitted to a central authority, preferably a committee composed of the chief executives of the business and which is presided over by the president of the company. These estimates should be submitted in a form which will make possible a comparison between the expenditures of past periods and the estimated expenditures for the current period. This enables the central committee, which we may term the execu-

SUGGESTED FINANCIAL PROGRAM FOR BANK LOANS

For Quarter Ending March 31, 1921

Situation at Beginning of Quarter:	
Notes Payable	$500,000.00
Notes Receivable Discounted	780,000.00
Total	$1,280,000.00
Monthly Program:	
January: Renew $45,000 of $47,500 due	
Reduction of Notes Payable for Month	2,500.00
Notes Receivable Discounted Matured	300,000.00
Total Reduction of Indebtedness to Bank	$302,500.00
February: Renew $75,000 of notes falling due	
Notes Receivable Discounted Matured	290,000.00
Total Reduction of Indebtedness to Bank	$290,000.00
March: Renew $60,000 of notes falling due	
Discount notes of R.L.S. and J.J.S. for $71,000	
Increase of indebtedness	71,000.00
Notes Receivable Discounted Matured	100,000.00
Net Reduction for Month	$29,000.00
Situation at End of Quarter:	
Notes Payable	531,500.00
Notes Receivable Discounted	90,000.00
Total	$621,500.00

Form 5

tive committee, to see if the contemplated expenditures of the department exceed its past expenditures. If so, it can ask the departmental head for a reason for the increase, and, unless good cause can be shown, it may refuse to permit the increase in the estimate. This provides an effective control over all the expenditures of the business.

The departmental estimates before being sent to the executive committee go to the executive in charge of the budgetary program. From these he prepares a preliminary estimate of cash receipts and a preliminary estimate of cash disbursements, and these are sent with the departmental estimates to the executive committee. By a consideration of these, this committee can determine the cost of financing the various estimates as submitted.

After the departmental estimates have been revised and approved by the executive committee, a revised estimate of cash receipts and disbursements must be made, and this revised estimate constitutes the cash budget for the period. Based on this budget a

financial program can be made which will provide the funds demanded by the budget. In case the financial budget calls for any considerable amount of additional funds, it is desirable that a contemplated financial program be submitted with the preliminary estimates of receipts and disbursements in order that the executive committee may see the possibilities of meeting the program which it is asked to approve.

After the departmental estimates have been approved by the executive committee, the departmental head should not be permitted to exceed his estimate without the permission of the committee. At the end of each month a report should be made to the executive committee showing a comparison between the estimated expenditures for each department for the budget period and the actual expenditures to date. Such a report will enable the committee to see the tendency in each department and will make it possible for the committee to take measures to prevent undesirable tendencies if they deem it necessary.

Monthly reports should be made showing a comparison between the estimated receipts and the actual receipts, and between the estimated disbursements and the actual disbursements. If revisions in the various departmental budgets are made on the basis of the monthly reports received by the executive committee, these revisions must be given effect in the cash budget. In some businesses, all budgets are submitted to the board of directors for approval. In this case they should be passed upon by the executive committee before being sent to the board of directors.

V

Although the financial budget may be made for a quarter, a half, or a whole year, it is necessary to make a comparison between the cash receipts and cash disbursements over shorter periods of time than is represented by the budget; otherwise there may be times during the period when there will not be sufficient cash on hand to meet current obligations. For instance, the cash receipts from accounts receivable and miscellaneous sources from January 1, to April 1, may exceed the cash disbursements for the same period, but there may not be sufficient cash to meet current demands at one or more times during that period. The demand for cash is an imperative one and care must be exercised to see that it is forthcoming at the time needed.

In the preceding discussion it has been assumed that such comparisons will be made monthly. The estimated receipts for each month are compared with the estimated disbursements for the month, and the excess of disbursements which must be financed, determined. Usually this procedure is satisfactory, but there may be cases where the receipts and disbursements fluctuate so violently that it is necessary to have a comparison on the basis of 10 or 15-day periods. In such businesses the fluctuating demand for cash is usually satisfied by arranging a "reserve line" of credit at banks so additional funds can be obtained immediately at any time when they are needed.

In the foregoing discussion the procedure by which the financial budget is prepared has been explained. It should be apparent that this procedure can be effective only when it is exercised as a part of a well-formulated financial program. It is not only necessary to know what the financial requirements of a business *are* so that plans to meet them can be made, but it is also necessary to know that these requirements are *what they should be.* In other words, it is desirable to know whether

the financial program called for by the financial budget is the one which will be the most profitable to the business. A consideration of what constitutes a proper financial program would necessitate a discussion of the whole problem of financial management, which is beyond the province of this article. There are one or two phases of the financial program, however, which are so vitally connected with the determination of cash requirements that it is thought worth while to mention them here.

Bankers have given considerable attention to the analysis of the assets and liabilities of business firms in connection with the granting of loans. From the viewpoint of credit granting, they have found it desirable to differentiate fixed assets and current assets, and fixed liabilities and current liabilities. This distinction is made largely on the basis of turnover. An asset with a slow turnover is termed a fixed asset, while one with a rapid turnover is termed a current asset. Liabilities are classified in the same manner. Since bankers have emphasized this classification in their relations with business men, the latter have come to regard it as fundamental. Many bankers have insisted on the use of the "rule of thumb" financial standard of the "2 to 1" ratio, and business men have come to believe that so long as they succeed in keeping their current assets twice their current liabilities, they are successful financial managers.

The classification of assets and liabilities as current and fixed is very useful in many cases, but it sometimes leads to a confusion of thought. Because any particular piece of merchandise will presently be converted into cash again, it is felt that it is a less permanent form of investment than a building. From the viewpoint of credit this is true, but from the viewpoint of capital requirements it may not be. If a concern never allows its merchandise inventory to fall below $20,000, that $20,000 is as truly a permanent investment in the business as is the cost of the longest-lived of its permanent assets. The same may be true of current liabilities. Many concerns never pay off all of their short-time loans at once. A business that always owes at least $50,000 on short-time loans, though it may clear up its account at each bank once a year, is obtaining that much permanent capital on commercial loans.

From the viewpoint of financial administration, there is a distinct difference between *permanent* assets and assets which involve a *permanent investment*. During any particular period of time a given asset or liability, whether permanent or current, whether an accrued or a deferred item, may vary in amount. The proprietorship may also change. Of course, the variations in different assets may not all be in the same direction at the same time, so that some will serve to offset others, and the same is true of liabilities and proprietorship. For the purposes of financial requirements the changes in the totals are of primary importance. Usually the total of each of these items fluctuates constantly. These fluctuations may be due to seasonal operations, in which case they are confined between certain maximum and minimum limits. Or they may be due to the permanent expansion or contraction of the operations of the business, in which case these may be a constant increase or decrease for a certain period of time. Even here a minimum or maximum will sooner or later be reached. In the case of a decrease a minimum will be reached below which the business cannot continue to operate. In the case of an increase or expansion of business, in time a state of diminishing returns

will be reached beyond which it will be unprofitable for the business to expand, and consequently, the assets of the business will cease to increase. The minimum total of assets of a business during the period under consideration, such as a year, may be termed the *constant* assets of that business, and the amount in excess of this minimum may be termed the *variable* assets. In analogous fashion, constant and variable liabilities and proprietorship may be defined. Thus, if the balance sheet of the King Manufacturing Company on June 1, 1921, shows:

Assets	$200,000.00
Liabilities	120,000.00
Proprietorship	$ 80,000.00

and the lowest value for the total assets during the year is $160,000, this amount will constitute the constant assets and also the constant liabilities and proprietorship. The variable assets will be $40,000 on June 1, and this is also the amount of the variable liabilities and proprietorship. The variations in the proprietorship total taken by itself will not ordinarily be large. It will usually increase gradually through an accumulation of profits and then drop off at the time when dividends are paid. If the profits are left in the business, there will be a permanent increase in the proprietorship, and if losses are incurred there may be a decrease.

VI

The assets of a business at all times are equal to the proprietorship plus the liabilities. Since the proprietorship does not fluctuate to the same extent as the assets, it follows that the fluctuations in the assets result in similar fluctuations in the liabilities. In other words the variable assets are offset by the variable liabilities. A comparison of the balance sheet and the financial budget will show that when the variable assets increase the cash disbursements will tend to increase faster than will the cash receipts which are obtained from the operations of the business. As the disbursements increase faster than the cash receipts, it is necessary to increase the bank loans. The increase in bank loans increases the variable liabilities, which in turn offset the variable assets.

The variable assets and consequently the variable liabilities will increase during the busy season of a seasonal business and will increase for all businesses during the upward trend of the business cycle when the operations of a business are expanding. They will decrease during the dull season and during the downward trend of the business cycle. In the same manner the financial budget should normally show increase of disbursements in excess of the increase in receipts during the busy season or upward trend of the business cycle, and it should show the opposite condition during the dull season and the downward trend of the cycle. Because of the non-liquid condition of the variable assets, this "normal" condition may not exist during the downward trend of the business cycle. For instance, during the past several months many firms have been "hard pressed" for funds because their variable liabilities have become due, and their variable assets have not been converted. In other words, it has been impossible to reduce their assets to the minimum when it became necessary to reduce their liabilities. This condition, however, does not nullify the general principle that during the downward trend of the cycle the cash receipts from the operations of the business should exceed the disbursements other than for bank loans, and that this excess should be used in paying these

loans. The present condition merely indicates that because of inadequate planning ahead many businesses were in such a condition when the downward trend of the cycle came that they could not do that which the conditions of the times demanded.

The primary purpose of the foregoing discussion with reference to variable assets and liabilities and the financial budget is to show the close relationship between this budget and the financial condition of the business as shown by its balance sheet. The budget sets forth the results of the contemplated operations of the business in terms of financial requirements. To interpret this budget properly and to judge properly of its desirability, the executives should have before them an estimated balance sheet showing the anticipated financial condition at the end of the period for which the budget is made.

But the purpose of the operations of a business is to secure a profit. A contemplated program of expansion or contraction as shown by the financial budget and estimated balance sheet is desirable only if it will produce profitable results. To determine whether this result will be achieved it is necessary to have an estimated statement of profit and loss showing the anticipated results of the contemplated program in terms of profit and loss.

The financial budget, the estimated statement of profit and loss, and the estimated balance sheet, are the three statements which show the goal towards which the contemplated operations of the business, as reflected in the departmental estimates, are leading. If these statements are properly made and properly interpreted, a basis for sound and efficient management is laid. The latter two statements will be more fully discussed in the next article.

VII

The preparation of the financial budget is not an easy matter. In most businesses, problems of considerable magnitude and difficulty are encountered. Some of these are inherent to the problem of financial control and some are the result of circumstances which exist in particular businesses owing to personnel or the nature of the operations of the business. The nature of these problems has been indicated to some extent by the previous discussion. In order that it may not be thought that these difficulties have been disregarded or minimized, it is deemed desirable to summarize them here. They may be stated as follows:

1. The financial budget is a budget covering all the activities of the business; therefore it requires the co-operation of all the departments of the business. Without this co-operation it is impossible to prepare an accurate budget or to enforce it after it is prepared.

2. The cash receipts and the cash disbursements in many cases are separated from the activities which produce the receipts or cause the disbursements by a certain interval of time, and it is difficult to estimate accurately the length of this interval. For instance, the collections from sales are not made until some time after the sales take place, and the payments for purchases are not made until some time after the purchases are contracted for.

3. The planning of finances is in most cases in the hands of the principal executive of the company or of the treasurer who acts as his confidential assistant. The financial methods which these executives employ are regarded as highly confidential. Consequently there is little or no exchange of information between companies with reference to financial methods, and no standardized procedure has been developed. In undertaking, therefore, the introduction of scientific financial planning, each firm is dependent largely on its own experiences and resourcefulness.

4. The executives in charge of the financial operations of a business are usually loath to delegate any duties with reference to them to others, and hesitate to commit their plans to a definite form for fear that they will be hampered in their freedom of action and that important information may be divulged.

None of these difficulties are unsurmountable, and fortunately the present tendency indicates a rapid removal of the latter two and the development of scientific methods of overcoming the first two.

In the preceding pages an attempt has been made to outline the procedure necessary for the preparation and control of the financial budget. In summary form this procedure may be stated as follows:

1. Preparation of a Preliminary Estimate of Cash Receipts

This requires the determination of the probable receipts from all sources. The principal source of cash receipts is the collections from accounts receivable, and the estimate of collections must be based on the estimate of sales which has been prepared in the manner previously explained.

2. Preparation of a Preliminary Estimate of Cash Disbursements

This requires the determination of probable disbursements needed to finance the operations of all the departments of the business. Consequently, the estimate of disbursements must be based on the various departmental estimates which have been explained in previous articles.

3. Preparation of the Cash Budget

The preliminary estimates of cash receipts and disbursements explained in 1 and 2 are submitted, together with all the other estimates, to the authority responsible for the approval of all estimates. After the various departmental estimates have been approved, the preliminary estimates of cash receipts and disbursements will be revised if necessary to give effect to any changes made in the departmental estimates by the approving authority. After the revised cash estimates have been approved, they constitute a cash budget.

4. Preparation of the Financial Program

Based on the preliminary estimates of cash receipts and disbursements, there will be prepared a suggested financial program which will indicate the financial procedure by which the requirements of the proposed financial program are to be met. This program will be revised, if necessary, to correspond to the revised financial budget and will then constitute the working program of the financial department.

5. Preparation of an Estimated Balance Sheet and Estimated Statement of Profit and Loss

These financial statements are studied in connection with the financial budget to determine the effect of the contemplated financial program on the financial condition and income of the business. The preparation of these statements will be discussed in a subsequent article.

ON WHAT BASES ARE COSTS ESTABLISHED?

BY A. F. STOCK*

COST systems can be classified into two broad divisions. They are either good or bad. A good cost system is one that aids in the management of the business, and accomplishes all the purposes a cost system should accomplish. A cost system is bad when it is established on the wrong basis. The best kind of a cost scheme, regardless of its methods and its detail forms, is almost worthless, unless it is established on the right basis for the industry concerned.

The average type of cost system to be found in plants where no outside advice has been sought is of mushroom growth. Its origin may date from a request from the sales manager for certain information, whereupon the cost clerk proceeds to "put in" some arrangements of data that will give him what he wants. Later, the works manager may ask for other information, and something else will be added to the cost scheme. This widening of purpose goes on, with procedures altered or added here and there, but with no definite attempt to co-ordinate this information. The result is that despite a certain usefulness, the management is left, finally, without a systematic method for gauging the factory.

Costs must be the yard-sticks for the management to measure and gauge results. The bases used in costs must be established so as to measure the production bases from the financial viewpoint, and also to reflect the results of certain sales policies, etc. For each operation, process, and department in a plant, a certain basis must be established to enable the management to gauge the results from it.

How, then, can the proper bases be established to make a cost system a real aid to management?

The main functions of a cost system are:

1. To control the plant as to manufacturing cost.
2. To get a monthly profit and loss statement.
3. To regulate and assist in selling, by establishing sales prices, as well as to point out profitable lines, etc.

The first of these functions is the most important, because if the manufacturing is properly controlled, the other things, more or less, take care of themselves. At the present time, selling prices are usually set by competition or by popular decision. It remains, then, to so control the manufacturing as to produce at less cost than the competitor. Expressed in a different way, the above three functions of a cost system are:

1. To aid the production end of the business.
2. To aid in financing.
3. To aid in selling.

With these purposes in mind, let us consider the things we have to work with. We have but three elements, namely, "direct labor," "direct material," and "overhead" or "burden." Briefly described, direct labor is all labor which can be directly applied to the salable product, such as molding in a foundry, machining a cylinder block in an automobile plant, etc. Direct material is that material which

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can be traced to the finished article. Distinguished from the above element of direct labor is such labor as foremanship over a department, inspection, general trucking, idle time, etc., which is applied over all products made in that department, yet which cannot be traced directly to any one product. This we call "indirect labor," and it becomes part of the overhead. Distinguished from the element of direct material is such material as coal, belting, and oil for machinery, small perishable tools, brooms, etc., which cannot be applied to any one product. This we call "indirect material." Overhead or burden consists of indirect labor and indirect material, and includes, in addition, such items as depreciation, insurance, taxes, power, heat, light, a proportion of general expense, etc.

II

Now, with these three elements of costs to work with, there are only four basic types of cost systems in which we can apply them. These basic types apply whether we consider the small 20-man shop, or the large 10, or 40,000-man corporation. The basic types of cost systems are:

1. Job or order costs.
2. Class costs.
3. Operation costs.
4. Process costs.

Briefly described, the job or order system is where each order, lot, or job stands on its own basis, and where costs are secured accordingly. This is the usual system found in machine-shops, in most foundries, and in jobbing plants of various kinds. Each job is different from other jobs, and the quantities put through are sufficient to get accurate time-records. Class costs are used where it is impracticable to get the cost of each lot or job, and where the product is classified and the cost of classes secured. Operation costs are used where the costs of certain operations can be found for a definite unit (as the number of square inches, pounds, pieces, etc.) put through that operation, regardless of lot or order. Process costs are similar to operation costs except that a series of operations may be combined and called one process because it is not practicable to get a measurable unit after each operation. The quantity of the units produced is only available at the final operation, hence all the operations are grouped and one process cost is then determined for the entire series of operations.

So, then, there are just four basic types of costs. It would seem easy to instal the proper cost system. Yet more cost systems are bad, because they do not establish the proper basis, than for any other cause. In addition to getting the basic type right, the question of the proper burden basis must be considered, and this is included in the statement that the establishing of the cost basis is the most important step in costs. With the exception of continuous process industries making the same product, it is rare that one basic type of cost system is used. In most plants, it is necessary to use two and sometimes all four types. One department or operation will be on one basis and other departments on other bases.

Before we take up the respective advantages and uses of the four basic types of cost methods, let us discuss the basis of applying the burden to the cost of any one job. The burden bases are connected only with the job or order and class types of costs, since in the process costs and in most operation costs, the burden is included with the labor for a certain process or operation, and divided by the units produced. Getting back to the burden

basis then, for the job and class types, the three methods generally used for applying burden or overhead to direct costs, are:

1. Percentage on direct labor amount.
2. Rate per direct labor hour.
3. Machine rate.

Other methods are also used, as for example, a percentage on prime cost (direct labor and material) but such cases are rare; and even in the industries where used, they are found to be so inadequate as to warrant gradual change to one of the three methods.

It is wrong to use just one blanket burden rate over everything. Burden must be compiled separately by departments, in order to give true costs on the product going through each department. Also, from the viewpoint of management control, a foreman should be held responsible for his own department's expenditures. As to the method to use in each department, the method of prorating burden rate on the direct-labor-hours is preferable because it bases everything on the factor of time. The burden in any one department should be the same "per hour of direct work," regardless of whether the worker gets a wage of 40 or 75 cents an hour. As a matter of fact, the 40-cent man really requires more supervision, etc., than the 75-cent man, being, presumably, the poorer worker of the two. Time never changes and burdens can be compared from year to year, in truer relations.

The percentage plan of distributing burden places too much burden on the high-priced worker, and not enough on the apprentice. Also, as wages fluctuate greatly, it is harder to standardize.

III

If the machinery in any one department is all of about the same class, and each machine or group of machines requires about the same amount of power and maintenance, then there need be no machine rates used in that department. The regular departmental burden rate will cover the expense of the machines. If, on the other hand, each group of machines is different in nature, taking a higher depreciation charge, and requiring more power and maintenance, then each group of machines must stand on its own basis, and be distributed only to the work going through that individual machine. This is done by means of machine rates. That is, each machine or group of machines has its own burden rate, based on the number of machine hours of that machine.

The new method of applying machine-rate burdens is different from the old, in that it deals only with three items of expense, namely, depreciation, maintenance, and power or fuel. These are the only items which vary according to the machine-hours of operation. All other expense items in a department are in relation to direct hours of labor. So when using this new machine-rate basis, it is applied as a super-rate after the regular departmental rate has been applied. For example, the cost in a certain department on a certain product would be ascertained by first computing the number of direct-labor-hours, times the wage rate; then adding the departmental burden as a rate on the number of direct labor-hours applied to the job. After this would come the number of machine operating hours applied to the job, times the machine burden super-rate, which rate would vary according to which machine the work was performed on.

Machine burden super-rates should only be used where the machines in any one department vary as to type. Use caution in your decision, as a good

many companies have too many such rates. For instance, a small machine-shop, in order to stay in business at all, would have a quantity of varied machines. These machines are needed, in order to make it a machine-shop, whether they are kept busy or not. You can readily see that if you attempted machine burden rates in a condition of this kind, your rates would be so high on the machines that were not used very often, that when a job came along which required one of those machines you would lose the job because of this high rate. In a department making two or more lines of product, and where there is special machinery for each line of product, it would be necessary to have separate burdens for the different special machines, in order to determine accurately the actual cost on each line of product.

After studying the three methods of figuring burden or overhead, let us take up the application of burden to the jobs. Burden should never be used as actual, but rather it should be predetermined at about an 80 per cent normal capacity basis. In other words, burden is applied to costs at a predetermined standard percentage, or rate per hour, or machine rate; then the difference between the actual burden and that predetermined, is charged monthly to profit or loss. Generally, a plant should operate somewhere near 80 per cent of its capacity in order to be normal. Burden is based, or predetermined, on this normal basis. This does not mean that if you have a special machine or department which you installed only to operate about one-quarter of the time, this machine or department's burden would be calculated at 80 per cent capacity. The normal operation of that machine or department would be considered as one-quarter capacity, and so on.

IV

Burden should always be predetermined. If this is not done you cannot expect to get business in times when you are operating below normal, because your high burden rate would shut out the very business you need in order to bring your plant back to normal.

Now let us discuss the basic types of costs, as applied to certain specific industries. In most machine-shops, foundries, and specialty plants—in fact, in most plants that make a varied line of products, and in that varied line also make sufficiently large quantities—you usually find the job and order types of costs. They have departmental burdens, and the direct labor and material is applied in each department to the job number or order number. At the completion of the order, the total cost is divided by the quantity of good units produced; and cost is computed accordingly. A good many plants, now trying to get costs on every order going through, could very much simplify their procedure through costing by jobs rather than orders. If you make, say, 100 different articles, and these are repeated again and again, it is rather difficult to try to separate each order. Why not accumulate the total cost per month by jobs, disregarding order numbers. This means you would build up what might be called a "synthetic" job cost. For example, if 1,000 pieces had gone through Operation No. 1, 800 through Operation No. 2, 700 through Operation No. 3, etc., you may have completed only 500 during the month.

Now surely it would be wrong to divide the total direct labor for that job, for the month, by the 500 completed, as more than 500 had gone through some of the operations. So what you really do, is to get the unit

cost of Operation No. 1, separately, and then the unit cost of Operations No. 2, No. 3, etc. Then you build up a complete unit job cost for the month, from the unit operation costs. The 500 completed, would then go into stock at this synthetic unit cost. By this scheme, it means 100 costs per month for 100 articles, rather than perhaps 500, if you use orders. Also, month-by-month, you compare the unit operation costs of these 100 jobs, rather than a multitude of scattered order-costs each for a different amount. Regardless of which of the above methods are used, the burden will be applied departmentally, either by the percentage plan or the hourly plan, and in some cases, the machine burden super-rate would be used.

One bad feature of individual order costs occurs when partial shipments are made on such orders, before the order is completed. When this happens, an estimated cost-figure must be set up, in order to get a monthly profit and loss figure.

If a plant manufactures, say, 3,000 to 4,000 products, it will be well to look around for some sort of class basis for getting costs, especially if it is a jobbing plant with very small quantities on each order. Even though it were possible to get individual order costs, they would be useless after you compiled them.

In jobbing plants of small order quantities, the cost varies greatly even on two orders for the same product. In these cases, average classified costs are preferable for any real managerial use. (This subject is treated further in discussing foundry costs.) In other plants, there are such operations as plating, galvanizing, japanning, polishing, etc., where all products are thrown together, and it is impossible to get the time of workers spent on any one product. Here, it is quite possible to classify the product, and get the direct labor costs of certain classes, and then apportion these to the tonnage or units put through that operation, in each class. The burden for the department is then applied on the basis of the direct labor in each class. To sum up: *Where job or order costs become too numerous, try class costs.*

V

As the operation and process types of cost are so closely allied, they may be treated together.

Process costs are used in so-called "continuous-process" industries, as chemical plants, some paper plants, etc. The total costs, direct labor, material, and burden, are charged to one cost account for that process. At the end of the month the total production is ascertained in units, and the cost of the whole process is divided by the units produced. Even though there is but one cost compiled, this cost must be analyzed in sufficient detail to give a real control of the cost of the process. In the process type of costs, it is very essential to determine the "work-in-process" inventory at the end of each month. The inventory at the beginning of the month must be valued and added to the current month's cost, and the inventory at the end of the month must be valued and deducted from the current month's cost. The net cost then, is applicable to the units produced during the current month. The process type of cost system can only be used where a whole plant, or a whole department, is devoted to the making of a single product, and when it can be measured by the same unit of production. If the process is the same up to a certain point, and then branches off with two or more products, the process type can only be used up to the point of branch-

ing off. After this it will be operation cost, or product type, as the case may be.

The operation type differs from the process type, in that a unit cost is established for each operation; whereas in the process type (which is a series of operations), it is possible to get the production only at the finishing point. Where a whole department is given over to one operation, the operation cost will include labor and burden, but where there are two or more operations performed in the same department, the operation cost will cover only the direct labor, and the burden will be applied according to the direct labor.

Operation costs should be used more widely than they now are. They give a splendid basis for management control. Costs can be compared easily, as to operation cost per same unit produced. This unit is practically always the same as used in production. To illustrate some of the uses of operation costs, some examples may be of interest.

In the manufacture of storage batteries for automobiles, there are hundreds of different types, but as these types go through the plant, it is impossible to get the cost of any one type, directly. It is possible, however, to get the cost of pasting the plates, per square inch; to get the cost of assembling the positive and negative groups, per plate; and to get the cost of assembling batteries per cell assembled, etc., throughout the industry. Then, from these basic operation costs, it is easy to compute the cost of any one type.

VI

In the manufacture of rubber tires, operation costs are used very effectively. In the smaller plants, after the operation of building the tire, all sizes are thrown more or less together. The curing operation will be a cost-per-tire, distinguished only between fabric and cord tires. Other operations will be per-tire for all tires; and still other finishing operations will be per-tire by certain groups of sizes.

In a large wrought iron-pipe industry, the operation of "bending and welding" pipe requires a gang of from 40 to 45 men, who remain as a standard gang, regardless of what size pipe is going through the rolls. Here the unit used, is to get a "cost per gang-hour." Then, knowing the number of hours or minutes applied by the whole gang to any one order, it is easy to compute the "bending and welding" cost. In this instance, the operation cost includes labor and burden.

The possibilities of using operation types of costs are enormous. Even in industries that get job costs, there are some particular operations where all the jobs are put through together, and here a proper basis must be found.

In order to get a clearer understanding of how one industry may have several bases of costs, and go into detail as to just how costs are computed, foundries may be used as an example. Almost every one knows a little something of foundry work.

Up to a few years ago, the average foundry would get its costs on a flat tonnage basis; that is, the total costs for a period were divided by the number of pounds of good castings produced, to get a cost-per-pound. If the management was lucky, the result was that the foundry made money. In proportion as the work done proved to be of the right sort, it was profitable. Another foundry not so lucky in choosing its business, might eventually fail. It was mostly luck, because the costs were not established to distinguish profitable from unprofitable work. In later years, foundries sought another basis for costs.

What is this new basis? To begin with, the foundry is departmentalized into melting, molding, coremaking, and finishing. In the melting department, the costs are established on the "number of pounds of metal poured from the spout of the ladles." The cost of converting pig iron into metal ready for molds includes the handling of the pig iron, scrap iron, limestone, coke, etc., to the cupola; the cupola labor; the labor and maintenance of ladles and pouring; and the cost of the metals and supplies themselves. All three elements, direct labor, direct material, and burden, from the receipt of the pig iron, etc., in the yard, to the pouring into the molds, are charged to an account called "Melting Cost." This is a process type of cost, divided by the number of pounds of metal poured. The cost of all metal is the same up to this point, regardless of whether it is going into a good casting, a bad casting, or into sprue (gates and risers). This process-cost-per-pound is separated into two divisions, a "conversion cost" (which includes labor and burden) and the actual material cost.

This is done to furnish the basis for checking up the melting department to find out whether the costs of metal arise in labor and burden, or in material. This division is very essential in non-ferrous foundries, as the metal mixtures may be different in each crucible melted. Here, the conversion-cost-per-pound would be added to the special-metal-mixture cost to determine the total melting-cost-per-pound. With this melting cost basis established, it is then necessary to get average weights from time to time of each pattern number made, and to use these weights to determine the number of pounds poured into good and bad castings. If possible, sprue weights are also made for each pattern. Where this is not possible, they are estimated, or the total percentage is used of all sprue to total good and bad castings poured. This same percentage of sprue is then applied to each pattern, in proportion. Knowing the pounds of good castings and bad castings, and sprue, on each order or job, this total need only be multiplied by the cost of melting per pound, to give the gross metal cost of each order or job. Deduct from this, the weight of the sprue which is valued at the total melt cost per pound, less the conversion cost (as it must be re-converted) and the result will be the net metal cost for the job or order. This process cost for melting is standardized and predetermined just like a burden rate; and each month the difference between the actual cost and the predetermined is charged to profit and loss.

VII

The costs in the molding department are usually on the job or order basis, that is, the molding direct labor cost is applied to each job by time-tickets. Burden is then added, either as a standard rate per direct-labor-hour, or as a standard percentage to direct labor amount. It is to be understood that the molding department has a separate burden. A super-machine rate would be added per machine hour, according to which type of molding machine the job was made on. The basis for costs in the coreroom is similar to the molding (job or order basis) and the coreroom has its own separate burden rate.

In the finishing department there are two possible bases. Where it is possible to get the sand-blasting, cleaning, tumbling and chipping cost for each order going through, it is proper to do so and apply the burden for the finishing department according to the direct labor applied to the job. In

some foundries, it is impossible to get the time apportioned to each order, and in these cases some companies have adopted a method of applying the whole finishing department cost (labor and burden) on the basis of the combined molding and coremaking time. The theory is, that the molding time covers the complexity of the outside of the casting, as far as finishing is concerned, and the coremaking, the inside.

The foregoing discussion of foundry costs covers those foundries that can get (and desire to have) their costs for each job or order going through. There are other foundries doing a jobbing business, where it is impracticable to get an individual order cost, and where even if possible, it would be of no profitable use. In the first place, no two orders, even of the same casting, would cost anywhere near alike, and second, where so many different patterns are run, it becomes impossible to connect past costs of completed jobs, with making estimates on future jobs. "Which one of the 10,000 jobs we make is this one like?" is an apt question of a sales manager trying to quote on future business. A jobbing foundry must work on average costs, because the quantities represented by separate orders are never big enough to run them economically. The plant makes its profit by getting margin over the average costs. Therefore, the basis for these foundries should be "Class costs." They should classify their castings according to weight classes; and then, further classify them according to medium and difficult cores, no cores, etc. Molding, coremaking, and finishing costs are then found by classes, and a pound cost is found for each class of what was produced in good castings. This makes about 50 costs per month as against the thousands necessitated by the special order method. Then, in quoting on future business, the sales manager uses the average costs of a certain class over a period of months. He can add or deduct from this base average cost, in accordance as to whether the new job to be figured on is more or less difficult than the usual run in that class. In these types of foundries, a "class cost" scheme is a big success whereas a "special order" scheme fails miserably.

Regardless of the basis established, if your cost system does not give the managerial use desired, it is not of much use. Costs must accomplish the three purposes treated in the beginning of this article; namely, aid and use in production, finance and selling.

Costs are only a means to an end—nothing else. Yet they point the way to better managerial control for the business executive interested in the development of his plant.

COST OR MARKET—WHICHEVER IS LOWER

BY R. E. BOOTH *

IN these days many merchants and manufacturers have on hand goods which they have purchased at a high cost, but which they have revalued in their inventories at market prices. It is highly important that the effect of such a revaluation be considered.

From the executive's standpoint, what occurs? Upon him rests the responsibility of making profits for his stockholders. Suppose, for example, in October, an article was purchased at a cost of $15, and $5 worth of labor was performed upon it. On January 1, an inventory was taken. Market conditions had changed materially and the same article could be bought for $5. The inventory was so priced and the books were adjusted accordingly. The new year's records reflect this item at a value of $10 ($5 material and $5 labor) and this value becomes fixed in the executive's mind. It soon devolves upon him to fix a new selling price for the article. Assuming that he has no competitor's price to guide him, he might easily set a price of $15 and assume that he was making a fair profit. As a matter of fact, he would be actually losing $5 on the transaction.

If we read an authoritative accounting textbook, or an article in one of the accounting magazines, we find it stated emphatically that in preparing financial statements, merchandise on hand should always be priced at cost, or, if the market at that time happens to be lower, at the prevailing market price. The consistent policy, however, of increasing the inventory, if the prevailing market price happens to be greater than the cost, is strongly condemned.

This view of the matter has been further endorsed by the federal taxing authorities as their rules now provide for pricing the inventory at cost or market, whichever is lower. It cannot be denied that this ruling has been a great boon to business men paying taxes on 1920 income, but the effect of the revaluation on the 1921 income must not be lost sight of.

Let us examine this proposition from an accounting theory standpoint. Accounting authorities are practically agreed that a profit is made and should be recorded at the point where "a cause of action has arisen which can be enforced against the debtor."[1] If we value our inventory at anything but cost, we must, under a double-entry system, offset such a change by a debit or credit, either to profit and loss, or surplus. To be consistent with accounting theory, however, we cannot do this, for no cause of action has arisen.

A sales transaction should be considered always in its entirety, and simply because it is found convenient to close the books on a particular day is no reason for showing on them either profits or losses on incompleted transactions. A balance sheet, on the other hand, is supposed to reflect true values, and so, items, taken into it as current assets, should be shown only at current values.

To present the facts properly, it

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[1] Robert H. Montgomery, "Auditing Theory and Practice," page 209.

would seem as though the accountant's method of resorting to a Reserve account could be used here to good advantage. The inventories should be shown at cost, regardless of market conditions.

If the market value is materially below cost, the inventory values could be offset by a deduction, "Reserve for Decline in Inventory Values," and general surplus could be charged, as is done when other reserves are set up.

If the market value is materially above cost, an account on the balance sheet entitled "Increase in Inventory Values," could be shown, offset on the other side by an account "Surplus from Increase in Inventory Values." Under no circumstances should such a credit be included in general surplus.

Under this method, the conservatism in valuation advocated by accountants and financiers is thoroughly complied with—the true facts are shown—and the actual sales transaction is not interfered with.

A banker or credit man, examining a statement such as is suggested, is put on his guard if purchases have been unwisely made, but, on the other hand, if the concern has on hand goods purchased at less than present market prices, good purchasing ability is shown, and the concern's credit rating is strengthened accordingly.

When the goods are sold in the period following the balance sheet date, the Reserve account, or the Special Surplus account, as the case may be, should be closed out, for their usefulness has served its purpose, the loss having been made good or the gain having been converted into an actual profit through sale.

The following entries illustrate this method.

In the example quoted on a previous page, the entries would be:

	Dr.	Cr.
When the Article is Produced:		
Cost of Product	$20	
Material		$15
Labor		5
At Inventory Time:		(Remains unchanged)
Cost of Product	20	
Surplus	10	
Reserve for Decline in Inventory Values		10
At Time of Sale:		
Accounts Receivable	15	
Profit and Loss	5	
Cost of Product		20
Reserve for Decline in Inventory Values	10	
Surplus[2]		10

If the article had increased in value at inventory time to $20 and later sold for $30, the entries would be:

	Dr.	Cr.
When the Article is Produced:		
Cost of Product	$20	
Material		15
Labor		5
At Inventory Time:		(Remains unchanged)
Cost of Product	20	
Increase in Inventory Values	5	(From $15 to $20)
Surplus from Increase in Inventory Values		5
At Time of Sale:		
Accounts Receivable	30	
Cost of Product		20
Profit and Loss		10
Surplus from Increase in Inventory Values[3]	5	
Increase in Inventory Values		5

[2] The Surplus account after Profit and Loss is closed out will show net reduction of $5, the amount of the loss on the transaction.

[3] Surplus account would not be affected until Profit and Loss account is closed out, when it would reflect a gain of $10, the profit on the transaction.

THE QUANTITY THEORY OF MONEY

BY ARCHER WALL DOUGLAS*

THE World War, with its aftermath and all its accompaniments of cold, brutal facts, completely destroyed a number of inherited economic traditions and creeds which had been accepted blindly, because no one had ever thought to question them. School economics, indeed, shares with Law and Theology the distinction of receiving an oft unthinking reverence for authority that has the sanction of time and inheritance. Among the notable beliefs in the economic world slain by the great conflict is the Quantity Theory of Money, though for some time the course of events seemed strongly to add to its proof and substance. One strenuous advocate boldly stated that it was "proved up to the hilt." It is now evident that the mantle of prophecy failed to alight on his shoulders.

Briefly stated, this theory holds that the amount of money in circulation is the determining factor in the price of commodities, in that an abundance of money is accompanied by advancing prices while decrease in the volume of currency is followed by declining prices. In effect, this was the basis of the Free Silver Campaign of 1896 in this country, since its followers held that there was not enough gold in the world to provide for the needs of trade and that consequently the extremely low prices of commodities prevailing at that time were due to the lack of sufficient circulating medium. On the other hand advocates of money on a gold basis contended that "free silver" merely meant a flood of depreciated currency with the inevitable accompaniment of unduly inflated prices. At present there are as many variations of the Quantity Theory of Money as there are of the King's Bishop's Gambit in Chess, and the stress is frequently placed upon the amount of gold in circulation instead of the amount of currency. As will be seen later, however, the amount of gold in circulation is entirely immaterial so far as the vital principle involved is concerned. The quantity theory of money is a very logical theory on its face. But there are a great many things in life which are logical or apparently logical but which are not true, and this is one of them. I, myself, was a firm believer in the theory once upon a time, but those were my green and salad days; when I was young; when the doubting Thomas in me was not developed; and before I made a practice of always having my fingers crossed in the presence of unproved statistics. So later I spent many weary midnights investigating the matter for myself, and it soon became evident that the theory was based solely upon a coincidence, namely, that of advancing prices being inevitably and naturally accompanied by a corresponding increase in volume of circulating medium.

As a matter of fact the result cannot be otherwise, since appreciation in prices necessitates more money to do business, e.g., it will require nearly twice as much money to buy nails at $2 a keg as at $1 a keg. The theorists simply got the cart before the horse by confusing cause and effect. What happens is that in actual business the determining factors in prices are supply and demand.

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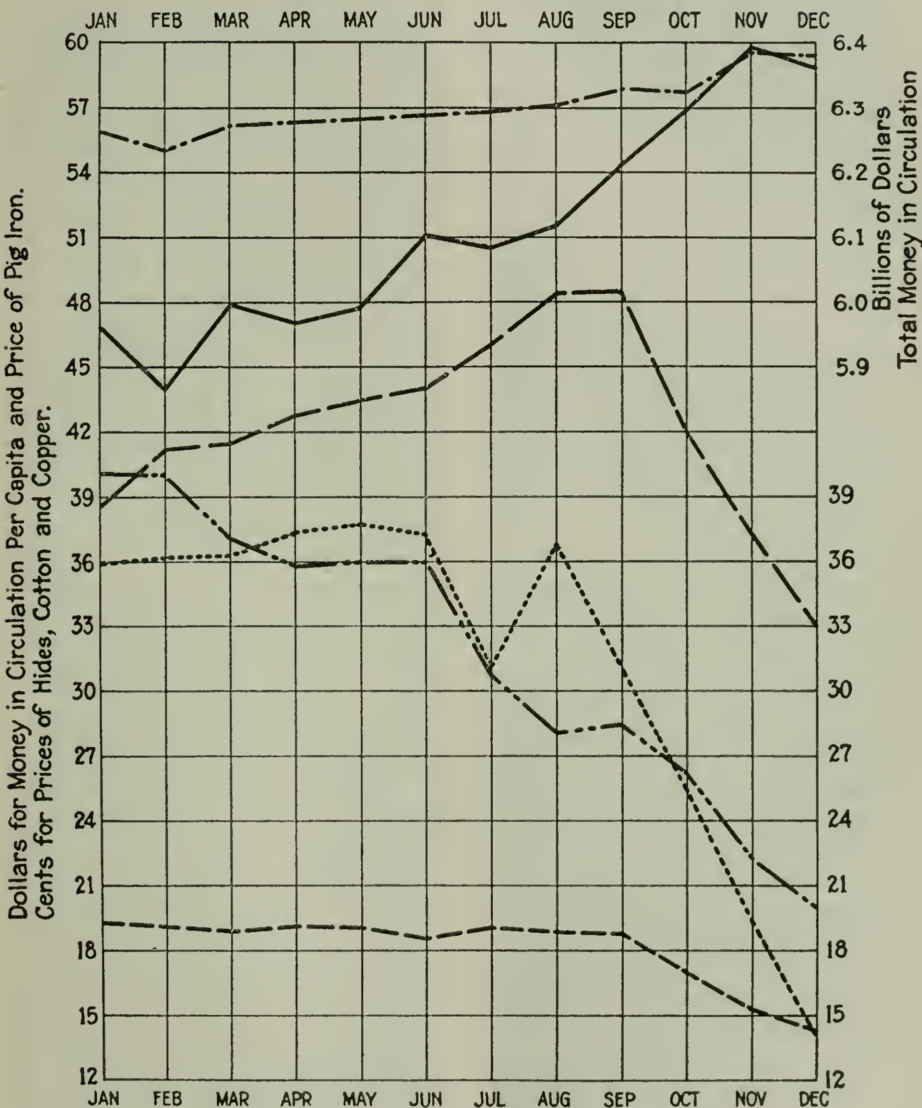
QUANTITY THEORY OF MONEY - U.S. STATISTICS FOR YEAR 1920.



Total Money in Circulation Per Capita
Total Money in Circulation
Basic Pig Iron, Price Per Ton, Dollars
Heavy Native Steer Packer Hides, Price Per Pound, Cents
Raw Cotton, Price Per Pound, Cents
Copper, Price Per Pound, Cents

A demand for any commodity has the natural tendency, as shown by experience, to advance the selling price of that commodity unless the supply is in sufficient quantity to take care of such demand. Broadly speaking, the scarcer an article, the greater the likelihood of its selling at high figures. Rare jewels are an example of this, not alone from their beauty, but even more because of their being so uncommon. Moreover, it is the experience of everyday life that prices decline in proportion to the extent that supply overtops demand. So elemental are these principles that producers constantly withhold their products from the market when prices are unsatisfactory. Hence, in normal times the factors of supply and demand are practically the only factors that are reckoned with in the rise and fall of prices.

A demand, therefore, that is not met by a proportionately adequate supply, naturally results in rising prices of the articles so affected. There must be sufficient currency or credit in existence or provided to carry the transaction through, otherwise the transaction cannot be consummated. In ordinary times the advances and declines do not vary so greatly in their total results as to call for any special addition to the volume of currency which is already in existence and which naturally is increased in proportion to the growth of population. This special addition to the currency is usually a measure slowly resorted to as was shown in the quarter of a century following our Civil War when there were two conflicting factors in active operation. One was the great increase in business done, thus requiring more currency, and the other the steadily falling prices of most commodities, thus, on the other hand, calling for less money to finance the same volume of business when reckoned in the unit of quantity. The needed increase was usually provided by the gold and silver mined, or by national bank notes secured by government bonds.

My investigations covering this quarter of a century brought out two facts in vivid relief and in complete contradiction to the quantity theory of money. The first was that it was utterly impossible to trace any connection whatever between the amount of money in circulation and fluctuations of prices, whether up or down; the second, that prices of individual commodities rose or fell solely according to the laws of supply and demand affecting them individually. Under exactly the same conditions prices of different foodstuffs showed diametrically opposite tendencies. Grains declined but livestock advanced, because grazing ranges in the West were invaded by growers of wheat and corn. In building materials, lumber advanced, because of unchecked deforestation curtailing potential supplies of timber, while brick and cement declined, since the growing output added constantly to the supply.

My investigations were devoted to the study of the individual price changes of 138 representative commodities, whereas, so far as my observation goes, the advocates of the quantity theory of money depend for their proof largely upon the *en masse* movements of index numbers. These forms of statistics seek to show the general price movements of all important lines of commodities in an approximate manner.

I have analyzed some of these index numbers issued by our government in relation to certain lines which I happened to know something about—hardware and house-furnishing goods—and found them principally remarkable for their inaccuracy and the utter lack of knowledge they displayed of the articles in question. How misleading they are when accepted in their en-

tirety without intelligent analysis may be gathered from the following:

One of these reports, a government publication, indicates that prices, in general, of nine representative and comprehensive lines showed, as a whole, advances of prices in 1918 of 11 per cent and in 1919 of 8 per cent. At the same time three of the groups of the commodities included failed to accord with this tendency. For fuel and lighting products declined 7 per cent in prices in 1918, metals and metal products 13 per cent in 1918 and 18 per cent in 1919, while chemicals and drugs dropped off 19 per cent in 1919. In other words at a time when prices in general were advancing and when this fact—because of the steadily increasing amount of money in circulation—was affirmed to be conclusive proof of the quantity theory of money, three important lines ran counter to the general trend.

One would naturally suppose that such a phenomenon would cause even theoretic economists, whose knowledge of business is drawn mostly from the printed page, to realize that there must be something wrong with their calculations when the engine is missing on so many cylinders. But you never can tell. For there are certain types of the student mind, which, when once a theory has become embedded in them, are thereafter impervious to opposing facts. In the metal trades what happened was both logical and inevitable. Along in 1917–1918 the peak of production was reached and supply began to overtop demand in many of the separate commodities. Hence prices fell without any regard to the growing volume of currency.

The final knockout blow to this antiquated superstition as to the effect of money on prices came in 1920, and after that, as Hamlet said, "The rest is silence," so far as argument is needed. The chart given herewith shows that during 1920 there was a general addition to the volume of currency all during the year, culminating in the final months of November and December. Prices of a few representative commodities, selected at random, show a peak along in late summer and early fall and after that a steady and rapid decline. These were the months of severe drops in prices of many forms of textiles, cottons, silks and woolens, and of precipitous declines in leather goods, in grains of all kinds, in lumber, and in livestock, while the volume of currency steadily grew.

The amount of money in circulation has no direct effect on prices, but indirectly it has an enormous effect, since business cannot be transacted without money. In the same way neither can houses be built without materials and tools, and yet the mere existence of these latter will not bring about an era of building by their mere plenty unless all the other requisites are present. Moreover an abundance of money and of credit, especially of credit which is an entirely different thing from money, usually leads to speculation, which creates an artificial and temporary demand which for the time being puts up prices. This is the indirect effect. A still more convincing proof of the part money really plays is found in some European countries where there is apparently an endless volume of currency, of a depreciated type, and yet where prices are falling. From now on, for a time at least, we shall probably see a decreasing volume of currency, not as a cause, but as an accompaniment and consequence of falling prices, since there will not be so much money needed in the conduct of business, and Federal Reserve notes will automatically be retired that there may be the necessary adjustment of supply to demand.

SOME ASPECTS OF PROFESSIONAL ACCOUNTING

MAVOURNEEN, AWAKE FROM THY SLUMBERS

BY PAUL-JOSEPH ESQUERRÉ*

LESS than two-score years ago, so I am told, the so-called American "Expert Accountant" was considered by a majority of business people as a disappointed bookkeeper out of a job; an individual who combined a capacity for hard drinking and hard swearing with hard work; an individual capable of producing—after considerable checking and proving, and for a fee which while low was always too high—financial statements few people understood and nobody took seriously.

That in the year of our Lord, 1918, accountants had not yet been able entirely to correct this preposterous opinion which laymen had of the profession, is evidenced by the following quotation from an article headed "The Expert Accountant," which appeared in the issue of *Judge*, October 26, 1918.

> The Expert Accountant is an individual with a trained brain which is capable of extracting more meaning and romance from a column of figures than the average stenographer can worry out of a Marie Corelli novel.

The article in question impressed me all the stronger because, only two or three years before, I had become painfully aware of the slight esteem, if not lack of respect, in which efficiency and production engineers held the profession of accountancy. If my memory serves me right, what I am about to relate occurred in the early fall of 1914.

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One evening I was invited to attend a meeting of the Engineering Society of New York. The well-meaning friend who waylaid me and invited me into that Olympus of highbrows maintains to this day that he had no idea whatever that he had invited me to a barbecue where accountants were to be roasted whole. Be that as it may, I was compelled to sit for two long hours, and look as interestedly pleasant as I could, while an efficiency engineer related one of his experiences with accountants.

The orator of the evening had recently taken a Canadian industrial plant under his wing and had reduced operating costs through the, to him, very simple process of increasing production. This commendable thing he had accomplished to his entire satisfaction, and, I am perfectly willing to assume, to the satisfaction of his clients.

It had been for years the policy of the Canadian concern to engage the services of accountants for the purpose of preparing semiannual financial statements. The accountants appeared in due course and attended to their task in the usual manner. Ignorant of the work performed by the efficiency engineer, they gathered the usual figures, arranged them to suit their purpose, compared them with the corresponding figures of previous years, obtained percentages in their good, old harmless way, and reported, in a rather critical vein, that, as between two accounting periods, the percentage of overhead expense to productive

labor had increased 30 per cent. To them this spelled factory mismanagement.

One may imagine the confusion created in the minds of the owners of the Canadian plant, when they became aware of the unbridgeable chasm dividing the camp of the Gods. Had they been familiar with the *Dies Irae Dies Illa* of the Roman Catholic service for the dead, they would certainly have expected a day of wrath, and prepared for the violent demise of accountancy. Whether or not they were ever aware of it, the accountants who were the villains of the engineer's story were wrathfully buried as incompetent bookkeepers, and with them in the same grave, the whole accounting profession was laid at rest. The only flowers that decorated their common burial place were the flowers of rhetoric so generously contributed by the indignant efficiency engineer.

After the meeting I begged to be introduced to the speaker, and tried to convince him that ignorance of the relation between factory burden and the number of units which are to absorb it is not one of the prerequisites of our profession. As the engineer was as big and forceful in personality as the traditional mad bull, while I am rather short of stature, the suavest of diplomacy was necessary to present my case. But it was all in vain! As a parting shot, he told me that there was not an accountant in the world who in his opinion was worth as much as a plugging bookkeeper in an East Side sweatshop.

A few months later I was again a guest of the same engineering society. As I entered the hall, a member was delivering a lecture upon his work as efficiency engineer in charge of the municipal asphalt plant of the city of New York. Among other things he stated that through efficient management the city had saved, in less than 6 months, some fabulous sum on its street repairs. To support his assertions he presented a few figures abstracted from the results of a system of accounts which I had personally installed in the plant.

Before proceeding further, I must state that at the time I installed the system, I asked particularly how it was to be used. I wanted to know whether the city officials intended to use the figures as an administrative instrument, or for political purposes, or again for the purpose of comparison with the results of private industry. My point was that, under the accounting provisions of the charter of the city of New York, it was impossible to consider as cost anything but the encumbered portion of specific appropriations for the asphalt plant, irrespective of the fact that, as a municipal enterprise, it would enjoy, *gratis pro deo*, a thousand and one privileges and accommodations necessary to its existence, and admittedly very costly to private industry. I was assured that all that was wanted was the control of expenditure by means of periodical statements which would guide the administration in forming a judgment as to the desirability of a plant owned by the municipality.

I shall not attempt to depict my dismay when I heard the efficiency engineer of the asphalt plant read, in a voice suggestive of his consciousness of the triumph of efficiency—a science apparently new to him—tables of figures which he compared with corresponding tables submitted by private industry, much to the discredit of the latter. It was my turn to be furious. I was assured by engineers who sat near me that the chairman would extend to me the courtesy of the floor if I wished to take part in the discus-

sion which was to follow, and so I took advantage of the opportunity to "go over the top."

A timely philosophical reflection impelled me to bottle up my wrath, however. Remembering that in this very room, only a short time before, accountants had been obliterated from the realms of the possible, because of the failure of a staff accountant to see a shining light in the industrial firmament, I reflected that, as between accountants who ignore, and engineers who misrepresent, the Kingdom of Heaven belongs to the meek and simple-minded.

So far I have spoken only of the past; and, as in the last few years we have lived very fast, what people thought of accountants 40 years ago or even in 1918, might very well fail to affect us materially. I shall therefore come down to the present.

Recently a business man of high standing told me that he was conscious of voicing the sentiments of a good part of the business world when he made the assertion that accountancy has forfeited the right to be called an independent profession, that it has sacrificed its freedom of action on the altar of financial prosperity, and that it has degenerated into a handmaiden of banking institutions and of firms of lawyers.

Granted that the business man was talking while under the influence of an attack of nervous dyspepsia; granted that the engineer of whom I have previously spoken was suffering from hydrophobia; granted that the many derogatory remarks made about the profession have no *raison d'etre* and can be classified as the superciliousness of ignorance even when malicious: still, it remains true that we should ask ourselves the question: What is the matter with accountancy?

That there is something the matter will probably be admitted by every accountant, with the exception of the few who, having reached the pinnacle of financial success, see the future through a roseate prism. The defects of the edifice we have so laboriously constructed are easily defined. I submit the following:

1. Untimely depreciation through the failure of the builders to protect the structure from exploitation by unskilled laborers, and unprofessional ignoramuses.

2. Obsolescence of the base caused by the indifference of the head.

What brought this about?

Organically, accountants must have a loose vertebra somewhere in their spinal column. This is evidenced by their indifference to their present status. Is accountancy a profession, or is it a business? If it is a business, it is admitted that everybody can be an accountant without the formality of a "by your leave." If it is a profession, why do accountants permit it to be misrepresented and even disgraced as it is today in so many flagrant instances. Why do they not take such steps as will require qualified accountants to register with the state in which they practice, precisely as other professions do?

As matters stand today, anybody and everybody can practice accounting. A member of the staff of a firm of accountants is "retired" for incapacity; he looks around for employment, and, unable to find it, raises the pirate flag, calls himself "auditor, accountant, systematizer, efficiency expert, curator of your earning power," and what not, and proceeds to exploit a gullible public. An ambitious youth, having completed to his satisfaction a course in bookkeeping, and unwilling to try his luck as a junior ledger clerk, rents office room, circularizes, peddles his nerve from door to door, and sells his services on a

"monthly basis of once a week, 2 hours, $17.50; twice a week, 2 hours, $27.50; three times a week, 2 hours, $37.50; once a month, ranging from $5.00," and within the year obtains from some accommodating state, the right to append the magic letters C.P.A. to his name and to represent himself as an accounting prodigy. A subaltern officer of a bank, having outlived his usefulness with the institution responsible for his training, is assured of proper financial backing, incorporates an audit company, hires a number of junior and senior accountants, and sails the high seas, raiding as he goes. Accounting schools by the hundreds promise the youth of the land an increase of 250 per cent in their present salary, as soon as they have completed a course in accounting. Advertisements appear in periodicals of high repute, exhibiting the picture of a mechanic who, upon graduation from a school of accounts, became president of an enterprise with a salary of $80,000. Still another advertisement shows a young man presenting a crisp $100 bill to his happy bride, the reader of the advertisement being gently led to the assumption that our interesting young groom gives away extra money obtained as a result of his taking an accounting course.

No one ever attempts to induce young men to join the ranks of accountants by the dignified statement that accountancy is to business what medicine is to the human body, and that the work of the accountant should be as highly appreciated and respected as the work of the physician, or of the lawyer, but that it cannot be expected to be more remunerative. Lecturers on accounting, or highly successful men in the field of accounting, are asked to address students on the prospects of accountancy: what is expected of them is that they shall paint the future with a golden hue. If, perchance, the lecturer advises the palpably unfit students to sell suspenders, shoe laces or other necessary commodities, as I invariably do, he is accused of narrow-mindedness, or selfish motives are ascribed to him; the very best that will be said of him is that he must have his little joke. Few accountants are aware of what is going on, and still fewer care, provided they are left undisturbed in the enjoyment of the harvest.

To fully realize the danger which is threatening accountancy, and to appreciate at its just value the fruits of indifference to the welfare of our profession, take the career of an accountant attached to the staff of one of the innumerable accounting firms, certified audit companies, *et tutti quanti*, which have grown like mushrooms during the last few years, and which have been permitted by the state to incorporate under names purposely misleading and defiant of the state professional laws.

At the age of 18, either because he has friends in the business or because he knows somebody who knows somebody else, our youth attaches himself to the staff of a rising firm of accountants. For a year or so he adds columns of figures, checks vouchers, inventories, car numbers or policy numbers (it is all the same to him) examines a few checks, scrutinizes their endorsements and their signatures, becoming more and more conscious of his inclination toward a profession so genteel, so diversified in scope, and so remunerative to the employers. Upon the advice of a co-worker, he reads a book here and a pamphlet there and thus picks up a perfunctory knowledge of funds and their uses; he gazes at corporation finance, inhales the mysterious perfumes of political economy, scratches the skin of commercial law, and, last

but not least, dissects very gingerly the outer envelope of the principles of accounting. This education gives him more and more confidence in his mental caliber, and places him in a position to discuss the weighty business questions of the day with his friends and relatives, and to sit complacently in front of the blank wall where, in a short time, his professional diplomas will hang conspicuously.

At the end of a year, the sum of his mistakes not being too formidable, he is advised to go to night school; there he plugs and plugs during the equivalent of from 150 to 300 hours, and warms his mind at the sacred fire of accountancy fed by the dry wood of bookkeeping, history of commerce, advanced accounting problems, accounts of executors, and the "last word" in theory of accounts and of auditing. If he is a man above the average, he even explores the mysterious caverns of cost, salesmanship, sociology, public speaking, after-dinner speaking, and what not, to say nothing of English grammar, his eternal enemy.

Meanwhile, he has become a semi-senior, and, provided he is given a schedule of the work to be done, of the accounts to be analyzed, of the particular weaknesses to be watched, and a detailed statement of the peculiarities of the client, he is perfectly capable of taking charge of small engagements, such as the audit of grocery stores, cigar stores, candy stores, fruit stands, social clubs, etc. Experience brings understanding in its wake, and at the end of 2 years from the date of entry into the firm, even before he has completed his school course, he may, if he is lucky and not too foolish, be made a full-fledged senior, and instal a system of cost finding in a small factory.

He has now reached the danger point; he knows all there is to be known in accounting except, perhaps, bookkeeping: he does not see the use of bothering his head with the things that he has not met in his "practice," of which he speaks with pride. In a short while, he knocks at the door of the State University and asks that the stamp of approval be placed on his brow.

You may say that I exaggerate; and yet the state of New York, whose professional requirements are probably higher than those of any other state, both from the point of view of preliminary education and of professional training, only requires, for the granting of a C.P.A. degree, to men who have successfully passed the examination, the equivalent of a high school diploma and 5 years of general accounting experience, of which 2 shall have been in the employ of a certified public accountant, in a capacity no less than that of junior accountant. Why junior? Why no less than junior? Could anybody be less qualified than the junior of 22 or 23 whom I have described? For, senior though he may be to his firm, to the rest of the accountants who respect their profession, he is still a junior and will not emerge from that state of adolescence for years to come.

Why do the associations of reputable accountants permit this state of affairs? Is it because they are convinced that having climbed to safe heights the tide of discontent cannot reach them? Or is it because they believe "there is plenty of room for all; give everybody a chance, and water will find its level?"

If we accountants really care for the welfare of our profession, can we not find some means of putting an end to a condition which, whether we are willing to admit it or not, is harmful to the profession? Have we not read, a year or so ago, in a publication devoted to the interest of accountancy,

a letter in which an accountant of excellent standing threatened to adopt the admittedly successful advertising methods of the younger generation, unless the organization in whose hands protection of the profession lies, found means of preventing the continuance of such practices? It was not, in this case, a question of professional ethics to be lived up to at all costs; it was a question of imitating the pirates unless the pirates could be made to respect ethics. The obvious deduction was: if commercialism pays, by all means, let us be commercial, provided thereby, we achieve financial success.

How can our societies control men who, for obvious reasons, cannot be members of them, or who do not care to belong to them for the simple reason that within such organizations censure is unavoidable, whereas outside of them it is impossible? What is the use of incorporating societies of recognized practitioners, of adopting stringent codes of ethics, of speaking of our love for our profession, and of making speeches at our conventions about what we have done and hope to do for the business world, when we deliberately allow outsiders to set their traps for the capture of the wary and unsuspecting? How can we expect a public, which has neither the time nor the inclination to learn the intricacies of our profession and its fine distinctions between legitimate and illegitimate, to have more respect for us than we have for ourselves?

If we accept the premise that accountancy is a profession and not a "business," and that the function of the accountant is to advise, guide, and teach others how best to conduct their business affairs, always placing their interests and welfare above his own, it must follow that the standards of practice must be raised to the highest level of service to the business community consistent with self-respect.

Practices smacking of the competitive methods of modern "business" in securing degrees and in building up a clientele have no place in a profession which aims truly to secure and retain the confidence of the business world through the integrity and high ethical standards of its members.

To what extent this can be accomplished by laws, and how far the force of collective professional opinion can make itself felt effectually under the present conditions is the problem confronting the sincere and thoughtful professional accountant today.

The problem is especially vital at this time, when thousands of young men are being guided into accounting work through the promise of rich pecuniary reward made to them by the many schools offering courses of instruction in accountancy.

PROBLEMS FOR THE BUSINESS EXECUTIVE

ACCOUNTING FOR EFFECTIVE INTEREST ON BONDS SOLD

By H. D. Grant *

WHEN bonds are bought or sold at a price under a redemption stipulation, which is to take effect on a certain date and at a stated amount of premium above their cost price, the effective rate of interest should be determined on the investment according to the expected redemption conditions.

If there is no variation from expected conditions in the interim between the time of the sale and their redemption, the effective rate will not in any way be disturbed; and the Profit and Loss account will reflect the amount of income or expense as originally determined. The method suggested by this article provides that the estimated cost of redemption should be set up tentatively, in order that the effective rate may be determined in advance, and schedules may be made of periodic values on remaining balances as they accrue. This will enable the bookkeeper to make his entries each period without interchanges which would have a tendency to confuse the records.

Any redemptions made at prices under those anticipated (which at times are available in the open market) are adjusted to the values as represented in the tentative account through Profit and Loss by journal entry. This makes the tentative account a clearing medium for the actual cost of redemption at the time redemption takes place.

The final result as shown by the Profit and Loss account is either the effective rate as forecasted, or modified to the extent the bonds were redeemed inside the price that was anticipated.

The treatise that follows shows the recording of such transactions in detail, and their absolute co-ordination when incorporated on the books of account.

The rate is based on the amount realized from the sale of the bonds, the running time, and the cost of redemption. The sum of the balances of outstanding bonds, at each period of their life at the par value, gives the total amount which is subject to the cash rate of interest. If the bonds were sold and redeemed at that value the cash rate would be the effective rate, but when they are sold at a rate below or above par, the effective rate is either over or under the cash rate. This difference is further increased or decreased when the redemption cost is over or under the par value. The net result of the periodic transactions over their life is the premium which has to be paid for the use of money. When bonds are redeemed at a cost equal to their par value the selling or issuing party neither loses nor gains, as he merely retires the obligation of an interest payment which in value is equal only to the earning capacity of the cash paid; i.e., if the issuing party did not retire the obligation and the cash was not needed in the business, the seller could possibly put the cash out at interest equal to the cash interest on the bonds, which would offset the amount he would have to pay on the unliquidated bonds.

The effective rate is the percentage which the sum of the total cash interest and the difference between the redemption cost and sale value shows, when divided by the sum of the balance of bonds outstanding each period during the life of the issue at the sale value. When bonds are redeemed at a cost above their par value, it is reasonable to consider the excess cost as a premium paid to the holder for waiving further participation of interest. This accordingly increases the cost, but the fact must not be lost sight of, that the premium is justified, as it releases the issuing party from the interest he would be obligated to pay should the bonds be held until their date of maturity.

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The writer's attention was called to this problem by finding in a recent book by an author, who stands high for his opinions regarding accounting procedure, a problem of this nature showing tables of periodic costs. In the solution offered an interest adjustment at the last period for an approximated difference of $640.61 was necessary—a large difference in light of the fact that the interest could have been shown accurately.

THE PROBLEM

"An issue of $1,000,000 of bonds is made at 90, carrying interest at 5%, and redeemable at the following rates, $50,000 each half year at 100 for the first five years, and thereafter at 105. Bonds are redeemed as specified, but are purchased in the market as follows:

1st year	92
2nd year	93
3rd year	95
4th year	97
5th year	98
6th year	100
7th year	102
8th year	104
9th year drawn at	105
10th year " "	105

A solution by tables follows:

The whole cost of the transaction consists of the total cash interest on the periodic outstanding balances of the bonds at their par value, the sum of which is $10,500,000 × .025 = $262,500: plus, the cost of the expected redemption less the sale value at 90 or $1,025,000 − 900,000 = $125,000, making the cost of $387,500.

We get the amount subject to the cash interest by treating the outstanding par value of the bonds as an arithmetical progression whose sum is: $S = \frac{n}{2}(a+1)$, in which n is the time, i.e., the number of periods; a is the first term and "1" the last term of the series.

First Term is	$1,000,000	First par value
Last Term is 1,000,000 ÷ 20 equals	50,000	Last par value
Their sum	$1,050,000	
Multiplied by 20 ÷ 2	10	
Sum of all the terms	$10,500,000	

$10,500,000 × .025 = $262,500 the total cash interest.

To determine the effective periodic interest we divide the money received from the sale of the bonds (reduced to a single amount equivalent, for a six-month period, to the bond money used throughout the life of the bonds) by the entire cost incurred in securing the money. To reduce to a single amount the value of the loan over the life of the bonds, the loan is treated as an arithmetical progression whose—

First Term is	$900,000	First value at 90
Last Term is 900,000 ÷ 20 equals	45,000	Last value at 90
Their Sum	$945,000	
Multiply by 20 ÷ 2	10	
Their Sum (or single equivalent value)	$9,450,000	

The total cost 387,500 ÷ 9,450,000 = .0410053, the semiannual effective interest rate, or .0820106% per annum.

To check the correctness of the effective interest rate, the effective interest costs incurred each period over the life of the bonds may be considered as an arithmetical progression whose sum should be the total cost of securing the money, i.e., $387,500. In this progression the—

First Term is 900,000 ×.0410053 equals	$36,904.80	First period
Last Term is 45,000 ×.0410053 equals .	1,845.24	Last period
Their Sum........................	$38,750.04	
Multiplied by 20 ÷ 2................	10	
	$387,500.40	
Minus adjustment due to the inaccuracy of the 7-place decimal interest rate..	.40	
	$387,500.00	

From the foregoing demonstration it can readily be seen that it is just as easy to get an accurate result as an approximated result, but this can be done only by a decimal calculation.

By following this method, each period will show a proportion of interest true in every particular; whereas, when it is approximated, as was done in the textbook referred to where the difference was $640.61, every periodic charge was conspicuously inaccurate.

In the figures as shown in the table given above there is a small difference of $.40 which was caused by going only seven decimal places in the quotient of 387,500 ÷ 945,000, when by going eight it would be correct as in the following:

$387,500 ÷ 9,450,000 equals...	.04,100,529	eight places
First Term................	$36,904.76100000	
Last Term................	1,845.23805000	
Their Sum................	$38,749.99905000	
Multiplied by 20 ÷ 2.........	10	
Sum of all the terms........	$387,499.99050000	

The conditions of sale and redemption being known in advance make it quite possible to construct the effective interest tables.

These should be kept on file in a convenient place, so that journal entries can be made each period from the tabulated amounts, as shown. At this time, such amounts as have been incorporated as accruals on the journal entry are marked off the tables in order to prevent any overlapping of periods on the books of account.

Once the tables are made, no further computation becomes necessary, and the periodic journalizing becomes almost automatic in its simplicity, and it is, moreover, absolutely accurate as was proved at the start by the sum of the progressions.

We will now show how these charges and credits are transcribed to journal entries each period and carried into the ledger accounts. If the details of each period were to be shown by journal entries, unnecessary space would be used and the principles involved might be confused. The entries will be made, accordingly, under the assumption that all the records are closed.

Only the totals for the whole life of the bonds will be used. Thus, the final analysis will show the same effect on cost, and at the same time unnecessary detail will be avoided.

The first table, Periodic Schedule of Bond Interest, is made up in its entirety at the time of the sale of the bonds. The second table, Actual Cost of Redemption, is set up period by period as the bonds are actually redeemed. The Journal and Ledger entries are given on the following page.

JOURNAL ENTRIES

	Debit	Credit
Cash	$900,000	
Bond Premium and Discount	100,000	
To First Mortgage Bonds		$1,000,000
Sale at 90 of the entire issue of First Mortgage 5% ten-year bonds January and July interest		
Bond Interest	262,500	
To Cash		262,500
2½% on $10,500,000 sum of outstandings at each of 20 periods		
First Mortgage Bonds	1,000,000	
Bond Premium and Discount	25,000	
To Estimated Redemption Cost		1,025,000
500,000 @ 100		
500,000 @ 105		
Estimated Redemption Cost	1,025,000	
To Cash		991,000
Bond Premium and Discount		34,000
To clear for new Account into actual		
Profit and Loss	353,500	
To Bond Interest		262,500
Bond Premium and Discount		91,000
Transfer from latter to former account		

LEDGER ACCOUNTS

CASH

Debit		*Credit*	
First Mortgage Bonds	$900,000	Bond Interest	$262,500
Balance Down	353,500	Estimated Redemption Cost	991,000
	$1,253,500		$1,253,500
		Balance Brought Down	353,500

BOND PREMIUM AND DISCOUNT

First Mortgage Bonds	$100,000	Est. Redemption Cost	$34,000
Est. Redemption Cost	25,000	Profit and Loss	91,000
	$125,000		$125,000

ESTIMATED REDEMPTION COST (Tentative Account)

Sundries	$1,025,000	Sundries	$1,025,000

FIRST MORTGAGE BONDS

Est. Redemption Cost........	$1,000,000	Sundries....................	$1,000,000

BOND INTEREST

Cash.......................	$262,500	Profit and Loss..............	$262,500

PROFIT AND LOSS

Sundries which cost..........	$353,500		

The tables, referred to above, which will be used as the basis for the journal entries are here shown.

PERIODIC SCHEDULE OF BOND INTEREST SHOWING EFFECTIVE RATE OF CHARGE TO PROFIT AND LOSS

TEN-YEAR 5% BOND INTEREST DUE SEMIANNUALLY

Periods	Outstanding Balances	Semiannual Cash Interest 2½%	Balances at Sale Price	Effective Rate .0410053	Estimated Redemption Cost		
					Sale Values	Redemption Cost	Premium over Cost
1	$1,000,000	$25,000	$900,000	$36,904.80	$45,000	$50,000	$5,000
2	950,000	23,750	855,000	35,059.56	45,000	50,000	5,000
3	900,000	22,500	810,000	33,214.32	45,000	50,000	5,000
4	850,000	21,250	765,000	31,369.08	45,000	50,000	5,000
5	800,000	20,000	720,000	29,523.84	45,000	50,000	5,000
6	750,000	18,750	675,000	27,678.60	45,000	50,000	5,000
7	700,000	17,500	630,000	25,833.36	45,000	50,000	5,000
8	650,000	16,250	585,000	23,988.12	45,000	50,000	5,000
9	600,000	15,000	540,000	22,142.88	45,000	50,000	5,000
10	550,000	13,750	495,000	20,297.64	45,000	50,000	5,000
1	500,000	12,500	450,000	18,452.40	45,000	52,500	7,500
2	450,000	11,250	405,000	16,607.16	45,000	52,500	7,500
3	400,000	10,000	360,000	14,761.92	45,000	52,500	7,500
4	350,000	8,750	315,000	12,916.68	45,000	52,500	7,500
5	300,000	7,500	270,000	11,071.44	45,000	52,500	7,500
6	250,000	6,250	225,000	9,226.20	45,000	52,500	7,500
7	200,000	5,000	180,000	7,380.96	45,000	52,500	7,500
8	150,000	3,750	135,000	5,535.72	45,000	52,500	7,500
9	100,000	2,500	90,000	3,690.48	45,000	52,500	7,500
10	50,000	1,250	45,000	1,845.24	45,000	52,500	7,500
	$10,500,000	$262,500	$9,450,000	$387,500.40	$900,000	$1,025,000	$125,000
Minus Adjustment................				.40			
Total Debit Profit and Loss..........				$387,500.00			

ACTUAL COST OF REDEMPTION

Years	Par Value	Cost		Profit and Loss	
		Estimated	Actual	Debit	Credit
1	$100,000	$100,000	$92,000		$8,000
2	100,000	100,000	93,000		7,000
3	100,000	100,000	95,000		5,000
4	100,000	100,000	97,000		3,000
5	100,000	100,000	98,000		2,000
6	100,000	105,000	100,000		5,000
7	100,000	105,000	102,000		3,000
8	100,000	105,000	104,000		1,000
9	100,000	105,000	105,000		
10	100,000	105,000	105,000		
	$1,000,000	$1,025,000	$991,000		
Estimated cost brought down				$387,500	
Difference or Actual Cost					$353,500

After the bonds have all been redeemed it is possible to calculate—a post-mortem operation—the net effective interest as follows:

Estimated cost	$387,500
Less: Redemption credit	34,000
Net cost	$353,500

Divided by $9,450,000, the equivalent single sale price, gives $.0374178, the net effective rate.

To illustrate another principle involved in making the computations and accounting for bonds we will now take a bond whose redemption cost is below the sale price, the difference being a premium. This would be the case when a sale was made of bonds bearing a cash rate of interest, of—say, 6% when the market rate was only 4%. Here, the effective rate would be 4% on the sale price. This is termed the book value, and consists of the par value of the bonds plus the premium. The prob'em which is involved here is manifestly the determination of the market or sale price of the bond.

THE PROBLEM

What should be received for a $10,000 issue of bonds due in 10 years on which we have to pay 6% interest per annum at an effective interest cost to us of 4%.

SOLUTION TO PROBLEM

Cash rate	10,000 × .06 = $600.
Effective rate	10,000 × .04 = $400.
Difference	10,000 × .02 = $200.

The excess cost each year is $200 for which we must get a premium above redemption cost at par. The excess interest for 10 annual payments constitutes an annuity of $200 which must be sold at its present worth, which will constitute the premium on the issue. The calculation of the present worth is given in the following:

The amount of $1 at 4% compound interest for 10 years—$(1.04)^{10}$ — is 1.48024428. $1 ÷ $1.48024428 = .67556417, Present Worth of $1 at 4% compound discount. $1—.67556417 = .32443582, Compound Discount on $1 .32443582 ÷ .04 = $8.110895 Present Worth of an annuity of $1 for 10 years.

This latter amount multiplied by 200 gives the Present Worth of an annuity of $200. ($8.110895 × 200 = $1622.17.) The premium to be amortized over the entire life of the bonds is therefore $1622.17.

The difference of interest to be applied as amortization each period is the Present Worth of the $200 at each period, the time element used in the first computation being 10 years, in the next 9 years, etc. The amount of periodic amortization can be found also by subtracting the effective interest from the cash interest.

The amortization increases from the first to the last year 4% each period, and if premium on Present Worth instalments of which the original bond premium is the sum. Therefore the effective rate of interest is made on the last book value as reduced each period by the amortization.

At the time of the sale of the bonds, the following schedule should be prepared and used as the basis for book entries made periodically to record interest payments

Cost Jan., 1911	6% Constant Cash Interest	4% On Last Book Value	Amortization	Last Book Value
		−	+	11622.17
1	600.	464.89	135.11	11487.06
		5.41	5.41	
2	600.	459.48	140.52	11346.54
		5.62	5.62	
3	600.	453.86	146.14	11200.40
		5.84	5.84	
4	600.	448.02	151.98	11048.42
		6.08	6.08	
5	600.	441.94	158.06	10890.36
		6.32	6.32	
6	600.	435.62	164.38	10725.98
		6.58	6.58	
7	600.	429.04	170.96	10555.02
		6.83	6.83	
8	600.	422.21	177.79	10377.23
		7.12	7.12	
9	600.	415.09	184.91	10192.32
		7.41	7.41	
20	600.	407.68	192.32	10000.00
Total	6000.	4377.83	1622.17	

we take the first period of $135.11 and multiply it by the amount of $1 for 9 years at 4%, we would get the last amortization amount necessary to retire the premium, ($\$135.1128 \times 1.423311 = 192.32+$). The effective interest decreases each period by the same amount the amortization increases.

The actual reason for this is that the book value (which is the sale price) is reduced each period by the Present Worth of $200 at that period, thereby absorbing the and bond premium cancellations or reductions:

We will now make an analysis of the effect in detail for each period over the life of the bonds as in the table on page 8.

The table (page 8) tells the whole story, 4% constant on the Par Value each period, and 4% on the periodically reduced value of the Premium as amortized by the Present Worth of the annual $200 excess interest above the market rate of 4%.

ANALYSIS OF PERIODIC ACCOMMODATION AND EFFECTIVE INTEREST COSTS

Years	Periodic Value of Bond Sale			4% Effective Interest			Amortization Sinking Fund Basis			Cash Interest 6% on 10,000
	Par Value	Premium	Total	Par Value	Premium	Total	Instalment	4% Compound Interest	Present Worth Accumulation	
1	$10,000	$1,622.17	$11,622.17	$400	$64.89	$464.89	$135.11		$135.11	$600
2	10,000	1,487.06	11,487.06	400	59.48	459.48	135.11	$5.41	140.52	600
3	10,000	1,346.54	11,346.54	400	53.86	453.86	135.11	11.03	146.14	600
4	10,000	1,200.40	11,200.40	400	48.02	448.02	135.11	16.87	151.98	600
5	10,000	1,048.42	11,048.42	400	41.94	441.94	135.11	22.95	158.06	600
6	10,000	890.36	10,890.36	400	35.62	435.62	135.11	29.27	164.38	600
7	10,000	725.98	10,725.98	400	29.04	429.04	135.11	35.87	170.96	600
8	10,000	555.02	10,555.02	400	22.21	422.21	135.10	42.68	177.79	600
9	10,000	377.23	10,377.23	400	15.09	415.09	135.10	49.80	184.91	600
10	10,000	192.32	10,192.32	400	7.68	407.68	135.10	57.22	192.32	600
	$100,000	$9,445.50	$109,445.50	$4000	$377.83	$4,377.83	$1,351.07	$271.10	$1,622.17	$6,000

The journal entries to record these details each period are summarized as follows:

JOURNAL ENTRIES JANUARY 2, 1920

Summary	Debit	Credit
Cash..	$11,622.17	
To First Mortgage Bonds......................		$10,000
Bond Premium..............................		1,622.17
Sale of 6% bonds due in 10 years to net 4% interest cost.		
Bond Interest..................................	4,377.83	
Bond Premium..................................	1,622.17	
To Bond Interest Payable......................		6,000
Cash rate 6% on sum of outstanding bonds each period of ten—$10,000 × 10 = $100,000.		
Bond Interest Payable..........................	6,000	
To Cash......................................		6,000
First Mortgage Bonds..........................	10,000	
To Cash......................................		10,000
Profit and Loss................................	*4,377.83	
To Bond Interest..............................		4,377.83

* Equal to 4% per annum on $10,000 for 10 years. $400×10=$4,000. Plus the difference between an annuity for 10 years of $200 and its Present Worth. $2,000−$1,622.17=$377.83 which is 4% on the sum of premiums remaining unamortized each period. (See column 2 of the Analysis Table above.)

The Ledger record would be shown in the following accounts:

Cash

Sundries	$1,622.17	Bond Interest Payable	$6,000
Balance Down	4,377.83	First Mortgage Bonds	10,000
		Balance Cost	4,377.83

First Mortgage Bonds

Cash	$10,000	Cash	$10,000

Bond Premium

Bond Interest Payable	$1,622.17	Cash	$1,622.17

Bond Interest

Bond Interest Payable	$4,377.83	Profit and Loss	$4,377.83

Bond Interest Payable

Cash	$6,000	Sundries	$6,000

Profit and Loss

Bond Interest	$4,377.83		

IS A FORMULA STRONGER THAN ITS WEAKEST FACTOR?

By Gayle Aiken, Jr.*

A company manufacturing a novel and improved clock had reached the point where it was ready to market its product, and needed a large distribution.

Its chief executive had planned and worked for years for this object. He had interested sufficient capital. His factory was completed, his manufacturing processes perfected, and he was able to supply a large demand. A large and quick demand for his product had become imperative and he determined to seek his goal by the short-cut of advertising. With the advice of experts, a promising sales plan was formulated, and the executives' final survey of his situation and prospects seemed to disclose the following factors.

*With Lord & Thomas, Advertising Agents, Chicago, Ill.

I. Financing

1. Invested Capital

The company's invested capital had been supplied by large financial interests, connection with whom seemed a source of great strength in case of need. This capital was represented by factory, equipment, patent rights, and development work.

The executive himself who was responsible for the birth and development of the company retained a 50 per cent interest.

2. Working Capital

The major part of the working capital had been advanced by the company's financial backers on demand notes, secured by the company's assets. These notes were, of course, recognized liabilities, but were hardly regarded as such because the lender's investment in the company stock was greater than the amount of the notes. It seemed reasonable therefore that the company's best interests would always be the first consideration with the holder of the notes.

The control was divided equally between the financial and operating interests.

II. The Product

Experiments covering a period of years proved that the product had been developed to approximate perfection.

III. Production

The factory now had a capacity of 3,000 clocks a month. As the clock was to retail at $35, it was obvious that a demand which would be relatively very large for a new product of such character must be created promptly to keep the factory working to capacity.

IV. Sales Plan

Based on the novelty and unusual merit of the clock and the need for immediate results a sales plan was formulated with the counsel of a well-known advertising agency.

It was first decided not to attempt the organization of a sales force. The time and expense involved were insuperable obstacles. A small selling organization would take too long to create a big market, and the expense of an organization large enough to create a large market quickly was out of the question.

It was realized also that the foundation of every market was consumer demand. It had therefore been determined to follow a course planned to secure dealer outlets for the product by going straight to the consumer to develop a demand which the dealers would feel. If this could be achieved the product would be moved from the factory to the ultimate consumer through the dealer, at one stroke. The obvious means to accomplish this was advertising.

A contract for page space had accordingly been placed with a great national magazine of commanding influence with public and dealers. The first page was to appear in October, with subsequent page in November, and a double spread early in December. It was obvious that the fall and Christmas holiday season afforded the best opportunity for quick results.

A broadside (large booklet) had been prepared, to be mailed, in the middle of August, together with a letter, to 20,000 clock dealers. This broadside showed the clock in its actual size and colors and contained reproductions of the advertisements of it which were to appear. A full description of the clock and a brief statement of its inviting sales possibilities were given and the dealer's cost and profit on each clock were prominently displayed. The broadside contained proofs of newspaper advertisements, electros of which were offered free for dealers' use, and illustrations of free window display materials.

A sales letter to dealers was to follow the broadside every two weeks.

It had been estimated as possible to sell a minimum of 5,000 clocks to the 20,000 dealers by this effort before the end of the Christmas season. This estimate was the basis of the plan because the sale of 5,000 clocks would cover the cost of a year's advertising campaign as planned and this money would be received in advance of its becoming due. Thus the company's three essential requirements would be met: (1) revenue, (2) dealer distribution, and (3) sale to the consumer. It was believed that these results could be accomplished as planned because of the appeal made by the unusual novelty and merit of the clock.

This was the situation confronting the executive at the start of the campaign. His hopes were amply realized.

The broadside brought orders for 3,000 clocks within two weeks, and more than a month before the first advertisements appeared to the public.

The response was immediate and it became increasingly evident that the clock would be a great success.

The first advertisement was published in October as scheduled. Its success was more than gratifying, but wrecked all the well-laid plans and brought all the long-cherished hopes of the executive close to destruction.

The sales from this one advertisement and the dealer campaign amounted to $106,000. This was well in excess of the estimate. But success brought surprise. When the possibilities of the business were thus proved, the executive received a visit from his financial backers who made the following proposition:

The business, it was stated, evidently had great possibilities and it needed and should have ample capital to develop them. His associates would subscribe dollar for dollar with him to increase the company's capital while retaining their proportionate interests.

The fly in this honey was the fact that the executive was unable to increase his investment. This fact was well known to the other parties. His inability being admitted, they then offered to subscribe the full amount of the additional capital, taking in return therefor a proportionate interest which would mean full control of the company. The executive refused. He felt that he had spent too much time and effort to permit anyone to gain control of his company; that he would fail rather than agree.

His financial backers insisted, explaining that their present investment demanded the protection of additional capital. A deadlock ensuing, they immediately called the demand notes held by them against the company. Though orders were coming in rapidly the company was unable to meet the notes immediately, and faced foreclosure. The executive was forced to cancel his advertising contracts and with success within his grasp practically complete loss of his interests stared him in the face.

The executive had taken the view that there was little danger to his interests in the existence of these demand notes. In the hands of outsiders they would, of course, be fraught with dangerous possibilities. But their holders had larger sums than the notes represented invested in the stock of the company itself. They would not, therefore, be apt to let the notes get into unfriendly or unknown hands or to take any action that would in any way jeopardize or damage the company's welfare. Since the ownership of the company was equally divided their protection of their own interests was protection for his.

This seemed so natural and plausible that the executive can hardly be blamed for the view he took. Yet upon the soundness of his analysis of this one factor in his situation his entire interests were staked. His mistake, as it later developed, brought him face to face with the seemingly inevitable loss of his whole property.

It will be obvious to analytical readers that a factor in the executive's formula did not actually have the value attributed to it. In the survey of the situation prior to the launching of the sales campaign each factor had seemed a true value, and the result of the formula certain. An overlooked financial weakness nearly cost him his business. The result of A+B+C+D will not be as expected unless each factor has been correctly valued.[1]

[1] By every recognized principle of business administration this executive had lost his game and failed when his notes were called. But it is worth while to note the variables that will occur to upset business principles. By the technical laws of strategy the man had lost his battle. By the laws of actual war he won, because when the crisis demanded it he was able to accomplish the feat of a lifetime. That greatest of variables, personality, triumphed over rules and circumstances.

REVIEWS OF BUSINESS BOOKS

PRACTICAL BANK OPERATION

By L. H. Langston, Under the Direction of The Educational Committee of The National City Bank of New York. Two Volumes, 713 pp. The Ronald Press Company

Reviewed by Walter Lichtenstein*

This work was published chiefly in order to furnish the National City Bank of New York with a textbook for its educational classes in banking. The preface frankly states that what was wanted was not a history of banking and a presentation of its theory, but a compendium of the actual method of work as carried on by the National City Bank of New York. This might raise the general question of the value of such work as has been done most extensively by the National City Bank of New York. There has been by no means a general agreement among bankers as to the wisdom of seeking to educate the whole force of an institution such as a bank.

Opportunities for education ought to be presented to all employees who have the ability and desire to avail themselves of such facilities as may be offered. When, however, the whole staff of a bank is *compelled* to take educational work, and an elaborate system is developed for checking up the progress in classes and studies, a false hope may be raised in the minds of the clerks, and a feeling spread that they are ill-treated unless in course of time they become officers of the institution.[1] Unfortunately, it is true in a bank as elsewhere that "many are called but few are chosen." Many banks have felt that it was better practice to encourage the educational work of the American Institute of Banking and leave it to the individual ambition and inclination of the clerk to decide whether or not he wishes to obtain special training. Is it telling tales out of school to say that it is generally understood that, in spite of its elaborate system, the National City Bank of New York has not been more successful in retaining its men than other banks, and the system is still too recent to have trained many officers and to permit judgment to be passed on it as regards its success or failure in this phase of its work?

The above is obviously not a criticism of the book, but rather a questioning of the methods which have brought it forth. As it is designed chiefly to serve as a textbook for the employees of the National City Bank of New York, it deals frankly with the methods employed in that great institution. In most respects these do not differ materially from the practices of other large financial institutions in New York and elsewhere. Perhaps the chief difference between the National City Bank of New York, the Guaranty Trust Company, and a few other banks on the one hand and most large banks on the other is the fact that the former have foreign branches and have developed certain phases of international banking to an extent which is not true in institutions which rely merely upon foreign correspondents. But while, therefore, the book is primarily of importance to the students at the National City Bank of New York, there is much in

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[1] Editorial Note—Those who review business books for *Administration* have absolute freedom in their expression of views whether favorable or otherwise. Thinking there might be a wrong inference from the assertion that the whole staff is compelled to take educational work, *Administration* asked the National City Bank whether its employees were required to enroll in its educational classes. On the authority of a vice-president of that institution *Administration* adds this footnote that such is not the case. Those employees who are in training for certain work are required to take certain courses of instruction. With other employees it is optional. Merely the opportunity if offered.

its pages to interest members of the banking profession elsewhere. I know of no other book which treats in any way as comprehensively as does this one, every feature and phase of practical banking; and while, as has been indicated, it does not attempt in most instances to go into matters of theory, nevertheless the careful reader will find much to interest him even from that point of view.

It is questionable in my mind whether the reader who has never worked in a bank and has had no intimate acquaintance with the technical details of banking operations will gain much insight from reading these two volumes. After all, the account presumes considerable general knowledge in regard to methods of bookkeeping and other phases of banking work which are perhaps not entirely familiar to a general reader. One or two chapters deserve special commendation, notably the one dealing with the operations of the clearing house. Probably many bank officials would read Chapter IV in the first volume with much interest, and many bankers whose own business does not bring them directly into contact with foreign affairs would derive profit from a perusal of the chapters dealing with foreign collections and foreign credits.

Since the work is primarily intended for the training of the clerks of the bank, the chapter on the general organization and administration of the bank is rather scant, presumably because it is believed that this concerns chiefly the officers, who will have familiarized themselves without formal training with this phase of the profession long before they become officers. It would have been interesting to officers of other banks if the author or authors of this work had presented in the final chapter a discussion as to how the territorial divisions in the National City Bank of New York function, and whether this arrangement has given general satisfaction. As is known to bankers generally, the National City Bank of New York has divided its work along territorial and geographical lines. Owing to the business depression now prevailing, the bank has had to curtail some of its operations outside of its immediate vicinity, and it is perhaps difficult therefore to pass any definite judgment on this arrangement at the present time. The question at issue is whether it would not be better to divide the work of the bank along commodity lines rather than territorial ones. After all, it may be more important that the official in charge of a division in a bank should be fully familiar with his customer's particular line of business than with the community in which the customer happens to operate. Conditions in the same line of business are apt to be more or less alike all over the country.

But when all is said and done, the work prepared by Mr. L. H. Langston is perhaps one of the most suggestive and interesting in connection with banking that has appeared in recent years.

PRINCIPLES OF MARKETING

By Paul Wesley Ivey, Ph.D., Professor of Marketing, University of Nebraska; Author of "Elements of Retail Salesmanship," etc. v, 351 pp. The Ronald Press Company

Reviewed by Judson G. Rosebush*

During recent weeks I have been exceedingly busy in working out the details of the purchase of a large interest in a paper concern in a neighboring city, and helping to settle a strike of its 500 working men; but in the interval I have had a good deal of pleasure and satisfaction in reading a recent book entitled "Principles of Marketing" by Paul Wesley Ivey, Ph.D., Professor of Marketing in the University of Nebraska.

Many business men will bear me out in

* President and Treasurer of the Patten Paper Company, Appleton, Wis.

my observation that as one moves from the realm of business struggle to the more quiet fields of scholastic training there comes too often a feeling that the transfer is from a world of fact into a world of fancy. No such feeling, however, has come over me as I have moved back and forth during a fortnight from the active life of finance and labor to the illuminating field of marketing as set forth by Professor Ivey. Yesterday I was struggling with the bankers, working with the labor leaders, or reading what Professor Ivey had to say. Whether engaged at one task or the other I was all the time conscious of the fact that I was dealing with real, solid, substantial things.

Professor Ivey's book has many merits but no merit greater than the fact that he introduces the student to a very real and actual world.

I do not say that the book could not have been made to glow more with human activities than it does. It seems as though the author might have illuminated his principles with illustrations a little more than he has done.

The striking series of illustrations which he gives us on pages 190–195, showing how the cost of the finished product has decreased with the size of the advertising campaign, is illuminating. The story which he tells us on page 176 is so striking that I must repeat it in his language:

> In 1893 a chemist in a little town in Pennsylvania accidentally created carborundum. He was experimenting with electric current, which he introduced into an iron bowl containing some clay and crushed coke. When the carbon was removed, he perceived that tiny, shiny, blue crystals stuck to it. He found that they were as hard as diamonds and could be used to polish gems. Before this time, diamond dust, selling at 70 cents a carat, was used for this purpose; but it was now displaced by carborundum which could be produced for 40 cents a carat, or $880 a pound. With a narrow market it would be difficult to reduce the unit cost of production. A wide demand had to be secured, new uses had to be found, which could be accomplished only when the merits of the product were thoroughly known. With this purpose in mind, advertising was extensively used; and, as a result, demand rose at a rapid rate, necessitating new methods of production since the productive capacity heretofore had been only 50 pounds a year. How advertising and intensive selling methods acquainted the people throughout the country with the merits of this article, is a story that reads like fiction. Suffice it to say that because of the demand for this product, which eventually became enormous and which permitted large-scale production, and because of internal economies, the production and distribution costs fell. The selling price per pound dropped successively from $880 to $440, then to $10, while in 1919 it sold for 12 cents.

The aptness of his illustrations makes one sorry that he has not carried this method of proving his point much further than he has done.

As a further illustration of the virility of the book I have been especially interested in his discussion as to the place of the middleman in modern industry, and as indicative of the acuteness of his perceptions.

I quote the following from page 16:

> It is a commonly accepted opinion that if some of the middlemen could be eliminated, the costs of marketing goods would be reduced. Such a contention is based on the belief that since every middleman must take out a profit, the larger the number involved in a distributive process, the higher the selling price must be. According to similar reasoning, the larger number of men employed in the production of a shoe, the higher must be its price, since the wages of several men must come out of the sale price of the shoe rather than the wage of one man. Obviously such reasoning is fallacious. A hundred men each performing one operation on the shoe may make a better shoe, and at a lower cost, than one man performing the entire operation. The same applies to the distribution of goods. Several middlemen between the producer and consumer may enable the goods to be marketed at a lower cost per unit than where a less number exists. Specialization in production usually means a larger quantity and a better quality, and this is no less true in the field of distribution. Why anyone should believe that in production a subdivision of processes is desirable but that in distribution it is not, is difficult to understand.

This virility and touch with life is broad and deep rather than shallow and superficial. Professor Ivey seems deeply interested in the transition from what he calls a seller's to a buyer's market, which he would have us understand occurred along in the 80's.

I believe that this tremendous evolution in industry centering around such a change should have more emphasis. For, after all, an understanding of tendencies in industry is quite as vital as an accurate analysis at a specific date. But at any rate the outreach of the book is broad, accurate, and vital, as even a cursory examination of the chapter headings will indicate, for among other subjects he discusses the functions of the wholesaler, the department store, the mail order house, the rôle of advertising, the determination of price, the exceedingly interesting question of the economical marketing of farm products, and the controversial subjects inherent therein.

In this respect the book shows a large vision on the part of its author. The alertness of his mind is not confined to a few subjects but is broad and general in its scope, and his analysis is at all times exceedingly clear and illuminating.

The other day I dropped the book down on the desk of our sales manager. The title attracted him and he opened the book at random and began to read. A few moments later I came in and took it.

"Hold on, Rosebush," he said, "that is a very interesting book you have there and I want you to let me read it through at the first chance."

That incident, I believe, will be found typical of the reaction of all business men who are interested in such matters as modern marketing methods, market analysis for the manufacturer, cost of merchandising, and a critique of the existing marketing system.

GREAT AMERICAN ISSUES

By John Hays Hammond and Jeremiah W. Jenks. xi, 274 pp. Charles Scribner's Sons

Reviewed by Royal J. Davis*

For a concise statement of the outstanding business and political problems confronting the country at the present time one can do no better than turn to this 250-page book by two of our best-known publicists. Starting with the proposition that, "Unless we put our house in order—politically, socially, industrially—nothing is more certain than that we in America are going to suffer before long from evils scarcely less terrible than those with which war has made the world familiar," the authors first take stock of our advantages and disadvantages in the international race. On the credit side they place adaptability, quickness in initiative, freedom from tradition, resources of capital and raw material, proximity to the great undeveloped resources of South America and China, and uncrowded land area. On the debit side they place waste and extravagance, restlessness, lack of a sense of discipline, lack of respect and reward for political leadership, lack of highly skilled labor, lack of a merchant marine policy, incompetent governmental administration, an inadequate system of education, and lax immigration laws.

The limits which Messrs. Hammond and Jenks have set themselves leave them no space to discuss these items, but their inventory of our national assets and liabilities will hardly be challenged. What, then, must we do in order to get the most out of our advantages and to overcome so far as possible our disadvantages? To this question the authors do not attempt a detailed answer. Their purpose throughout is not to supply a bill of particulars but to sketch the broad outlines of conditions and requirements. Their volume is rather a brief than a finished argument. This does not mean that it dodges difficulties. On the contrary, difficulties are its theme. But it contents itself with setting forth essentials.

Thus in reply to the question of how to

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deal with our advantages and disadvantages it observes that "our first objective is to reach a clear understanding of the fundamental facts which underlie the conditions with which we have to contend abroad." Foremost among these facts it places the great difference between our standard of living and the standard of living in Europe. Compromise on this point is impossible: "We must maintain our standard of living in order thereby to maintain the high standard of our citizenship—this is a supreme political necessity." Another of these fundamental facts is stated in these words: "The chance of keeping the world at peace for any considerable period depends ultimately upon whether or not the nations are willing and able to improve the living conditions of their people. It is not too much to say that the surest guarantee of peace is general prosperity." In addition to these fundamental facts the authors lay down two principles: "That Democracy is not the expression of the equality of all men, but of their equal right to develop, to exercise, and to profit by their individual qualities; and that no program of social justice can ever realize its object if it seeks to interpret equal opportunity in terms of an equal reward for unequal service." They emphasize the importance of the individual: "hope for better democracy, better society, and better business, lies after all in a better breed of men."

With these well-reasoned considerations as a guide they proceed to an examination, in order, of the problems of government, of labor, and of business, concluding their survey with a chapter on "Remedial Suggestions." In the section on government the requirements are summarized in the statement: "the chief concern of the people in government is that it minds its own business, that sound counselors be chosen to decide its policies, and that able men effectively carry out these policies." A practical difficulty with the first of these three principles is "a notable peculiarity of large numbers of the American people—that they appear to believe that their wishes, as expressed practically in municipal, state, and national legislation, are as good as realized when a law has been signed, and that the task, whatever it may be and however difficult of execution, will not be too much for government to undertake." In contradistinction to this attitude, Messrs. Hammond and Jenks hold that "governmental action is, and must remain, largely restrictive, seldom constructive," and they enforce this dictum by an analysis of government ownership. Concerning the choosing of "sound counselors" they note the disproportionate number of lawyers in political life, and the growing desirability of more business and professional men, and in general, a better class of men. For administration, which is the carrying out of policy, we need exclusion of partisanship—partisanship has served its purpose when election day is past—and this means appointment instead of election of most officials and permanence of tenure of subordinates.

In the section on labor, Messrs. Hammond and Jenks insist upon the principle of collective bargaining, but after a review of various arrangements for obviating strikes, boycotts, and lockouts, they come to the conclusion that the real solution is yet to be found. The problem of unemployment and the problem of adjusting incomes to changing levels of prices are also acute, with nothing but tentative solutions in sight. Upon immigration our authors pronounce more decisively. They approve of stringent limitations, at least for a while. They mention the proposal, now embodied in law, to limit immigrants to a certain percentage of those of their nationality already here, but think that a better test would be that of the readiness of immigrants to become naturalized. In practice, there would be little difference in results between these two methods. In addition, they would take into consideration the occupation of immigrants at any moment favoring those who follow occupations which we need. This and other questions, including Americanization, should be handled by an Immigration Commission of high quality.

In the section on "business," competition, big business, the tariff, foreign trade, and foreign exchange are discussed with the same insight and practicality which characterize the rest of the volume. The

importance of our foreign trade is not minimized, but the reader is reminded of the much greater magnitude of our internal trade. The most interesting suggestion in this part of the book is that of a Federal Business Commission:

—to decide, upon facts submitted to it, whether in a given instance competition was or was not prejudicial to the public interest; whether a certain business was or was not employing monopolistic methods to the detriment of the consumer; whether a certain selling price was or was not in the nature of profiteering; whether a certain capitalization represented a fair measure of value or an unfair profit to promoters.

Upon the tariff our authors take a middle ground. They believe that the Underwood Tariff should be revised so as

—to protect and preserve the new industries which were developed during the Great War and which are necessary if we are to be reasonably self-sufficient in case of future war or national stress of any kind; to prevent the serious derangement of our industries and the probable ruin of many establishments through the dumping of European goods on our markets at abnormally low rates; and to maintain the standards of living and working of our people which would be seriously endangered unless such protective measures are taken.

Some of these things are attempted by the Emergency Tariff Bill, passed since this book was written, but Messrs. Hammond and Jenks would have the changes "worked out, as recommendations to be submitted to Congress, by a permanent Tariff Commission whose interests will be entirely non-partisan while soundly patriotic." For our future foreign markets, our authors hold, we must look in the long run to the so-called "backward nations" of South America, Africa and Asia, and to Russia.

The final section of the volume, "Remedial Suggestions," praises the American trade union and dismisses as fallacious the schemes of Socialism, Anarchism, Syndicalism, Sovietism, and Bolshevism. The authors base their hope for the future upon education, but it must be an education that educates for life and not for culture alone or principally. School, college, and university must play a larger part in the practical preparation of youth for their work. In this section as all through the volume the authors are mindful of the lessons of the war. Yet they do not make the common mistake of allowing it too large a place in their calculations. The great virtue of their book is its sound perspective.

TALKING BUSINESS

By John Mantle Clapp, Lecturer on The Language of Business, New York University. xxxiii, 526 pp. The Ronald Press Company

Reviewed by James Fleming Hosic*

Almost everyone will readily admit that persuasive speech is one of the most important requisites for success in business, for the fundamental element in business is, of course, the human element. The business man must deal with men and he must reach them through the one universal medium, the language of every day.

There is, however, far less certainty when it comes to the problem of how to develop effective speech in business. The combination of sincerity, directness, and tact required must go along with certain other qualities not always present but possible to acquire. What is needed is clear and sound advice as to how to acquire them.

Such advice is precisely what is offered in Mr. Clapp's recent book on "Talking Business." He explains in order, the psychology of speech, the problem of reaching "the other man;" the machinery, the

*Editor of *The English Journal*, Official Organ of the National Council of Teachers of English, Chicago, Ill.

physiological basis of tone and enunciation; and the fundamental problems of language in a selection and arrangement of words, especially as involved in talk. Then follows conversation, business interviews, and finally, business addresses, the more elaborate applications increasingly demanded in modern life when a man is to convey his thoughts to groups of listeners. The treatment is comprehensive and well balanced. To leave out any of the divisions would have been a fatal defect.

The style of this book will commend it instantly to the man of business. In it is found a rare combination of breadth of thought and aptness and homeliness of illustration. Though written by a man who for many years was a college professor of English, it displays none of the high-brow traits commonly associated with the college professor. How much of this may be due to the fact that the author has now for some years been actively engaged in business, perhaps no one can say. The fact is indisputable. Indeed, the book is its own best argument. Although in the form of print, it speaks to you from the page in just the tone which the author is pleading for. For example, no one can fail to catch the point after reading the anecdote in which Mr. Clapp tells how an audience of sailors took the measure of a speaker who overshot the mark but frankly welcomed the speaker who knew how to reach them. "The first speaker delivered a monologue; the second put his mind on the men before him."

Some of the attractiveness of this excellent volume is due to the publisher. Bold face type makes the heading of each main point stand out. Tabulations and an open page attract the reader and prevent any appearance of heaviness. The type page is restful to the eye, and the whole book has a comfortable feeling in the hand. It belongs in the highest class of publications now offered to those interested in the improvement of business.

Nor will the readers of "Talking Business" be confined to the world of commerce. Both teachers and general students will find it genuinely helpful. Indeed, if most of what goes under the head of college English could be replaced by something as human and practical as is suggested by this work, there would be less opportunity for low comedy based on the affairs of the "cloistered" halls of learning. Without doubt many a high school teacher who is struggling for a new technique in oral composition will find here the inspiration and guidance which she has been looking for.

ORGANIZED LABOR IN AMERICAN HISTORY

By Frank Tracy Carlton, Professor of Economics, De Pauw University. 313 pp. D. Appleton and Company

Reviewed by Paul F. Brissenden*

This book by Frank Tracy Carlton appears coincidently with the revised edition of his "History and Problems of Organized Labor"[1] a textbook which was first published in 1910. While the new book, like the old, deals with American labor organizations, it handles the subject in a different fashion. Mr. Carlton shows a strong predilection for the historical aspects of labor problems and in both books he has done valuable work in presenting and interpreting the record of the rise and fall of the small, ephemeral unions and of the growth and development of the greater bodies which are still carrying on in 1921.

The earlier volume recites the record in the more or less regimented, lockstep manner common to textbooks. The new book is really a series of essays, arranged in a roughly chronological order, in which the author discusses, with no little discrimina-

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[1] Published by D. C. Heath and Company.

tion and insight, some of the salient issues raised in the course of the last 125 years of American labor history. Most of these issues—even some of those which first rose to plague the tired business man a century ago—are today not only alive, but distinctly relevant to today's industrial situation. The purpose of the book, the author says, is "to present the background for an intelligent consideration of the labor problems of today."

After an introductory chapter in which he outlines the outstanding epochs in the history of organized labor in the United States, Mr. Carlton discusses the adoption and interpretation of the Constitution and its bearing on the labor problem. He follows this with four chapters in which he considers the wage-earner and the status of the wage-earner in relation to the free school, the land reform movement, labor legislation, the abolition of slavery and the preservation of the union, the extension of the suffrage, the tariff, and the abolition of imprisonment for debt.

The last and, in the reviewer's opinion, the most interesting half of the book contains chapters on labor parties and the socialist, direct-actionist, and progressive movements; the ideals of the wage-earner; recent pre-war tendencies; and "the war and after." In view of the scope of the book as here indicated it would perhaps have been more accurate to have entitled the book not "History and Problems of Organized Labor" but "Labor in American History."

Only the latter part of the book can come in for comment here. The four chapters which make the second half of the book contain much well-considered and thought-provoking criticism, both favorable and unfavorable to the unions, but in either case quite obviously penned by a writer who is distinctly sympathetic in his attitude towards labor organizations. Mr. Carlton thinks that, among recent tendencies, two of the most important are the transition now slowly taking place in trade union structure and the changed attitude of trade unionists on the subject of political action. He believes that recent changes within the American Federation of Labor "may soon make possible an approach between old line (so-called 'pure and simple') unionism and the more conservative elements of the Industrial Workers of the World." As evidence of this he points out that "a considerable number of western workers hold cards in a regular (A. F. of L.) union and also in the Industrial Workers."

This fact is important; but its conclusiveness as evidence of an "approach" between "old-line unionism" and the "more conservative elements" of the I. W. W. is discounted by the fact that such a practice of dual card-holding has been "considerable" ever since the I. W. W. was founded in 1905. Mr. Carlton is right in saying that there is a definite drift toward the industrial type in trade union structure and he cites in support of his statement an abundance of other evidence.

The upshot of it all is that, as Mr. Carlton says, "the substance of industrial unionism, stripped of the dry and repulsive husks of lawlessness, syndicalism and sabotage, is being gradually, unostentatiously and somewhat reluctantly absorbed by the Federation."

> If this process continues, if the Federation, with its affiliated national and international unions, gradually sloughs off the worn and divided shell of trade unionism and puts on in its stead the more attractive and cosmopolitan mantle of industrial unionism, this great labor organization must throw on to the scrap-heap much of its narrowness and its practicality, and be contented with more of inclusiveness and of idealism. It will also be obliged to lessen the stress hitherto placed upon the requirement that the labor leader 'deliver the goods' in the near future, and to increase the emphasis placed upon more diffused and slower returns.

About the desirability of labor's making a different and more effective use of political action the author entertains no doubts. As to the course labor will actually pursue, he is, naturally, less sure. On the whole, he thinks, signs point to a growing interest on the part of organized labor in politics. The new slant to be taken involves the gradual abandonment of the traditional A. F. of L. policy of labor "rewarding its friends and punishing its enemies" in favor of a separate labor party. But there are many obstacles in the way of such a change. One of these obstacles is the common

habit among powerful unions of "exalting the means—organization—rather than the end—betterment of living and working conditions," with the result that trade unionists will often countenance "more sickness, more suffering and more premature deaths among multitudes of workers and their families coupled with strong trade-unionism" on the ground that they "are preferable to less with weakened unionism."

It is also pointed out that legislative action in regard to hours, minimum wages and factory conditions will benefit unorganized labor more than it will the members of labor organizations; but organized labor has not habitually manifested much interest in improving the condition of the unskilled and unorganized. From the point of view of the unionist, improvement in working conditions or increases in wages obtained through legal enactment or because of voluntary concessions on the part of the employer, are of less importance than labor solidarity in the face of defeat. In short, let it be repeated, organization, coherence and loyalty to the union are considered by organized labor to be of more value to the wage-earners as a class than higher wages, a shorter working day or welfare provisions obtained without struggle or sacrifice.

But the apprehension obviously underlying this attitude on the part of the unionists is, in Mr. Carlton's opinion, quite unwarranted. He tells why it is unwarranted:

If legislative action favorable to the interest of labor came about solely as the result of pressure brought to bear by a well organized and closely knit labor party, there would be little or no occasion to fear that legislation in regard to hours, minimum wages, and the like would weaken organized labor. Legislative work would be just as definite a form of union activity as are strikes. To obtain demands through legislation would strengthen the solidarity of labor as much as if those demands were obtained as the result of activity on the industrial field.

Finally, the author points out that the employees of the great trustified industries, such as the iron and steel industry and the oil industry, are unorganized and that, furthermore, the "labor policy of the large corporations (in such industries) almost inevitably determines the labor policy of the entire industry."

He concludes:

Since it has been almost impossible to bring about organization within such industries, the hope of betterment through the pressure of the workers can be realized only by means of political action—unless the war works a radical modification. The ballot is secret; but union membership cannot be successfully concealed from the spies of employers.

There is assuredly great danger involved in the spread of professionalism in any kind of an organization—labor or other—when the officials of an association come to look upon that association as having for its main purpose the providing of them with their jobs. Mr. Carlton sees this danger and he doubtless believes that when this unhappy stage is reached there is no one so valuable as an insurgent.

The ideals and policies of American labor leaders are shortsighted and narrow visioned; these are the inevitable products of business unionism. These men see always dangling before their eyes the petty and immediate results to be gained by aggressive unionism of the striking and bargaining type. Immediate results in the form of higher wages, and place and prestige for labor leaders obscure the demand of the common man—the great inarticulate mass of workers—for fundamental economic changes which more farsighted students of social progress and which alert business men see coming over the horizon.

The American Federation of Labor is the embodiment of business unionism; and Samuel Gompers, whose dominating principles in regard to unionism were crystallized in the eighties and nineties of last century, is the controlling force in the Federation. Why has business unionism become the prevailing type of labor organization in the United States? Why is a man of Mr. Gompers' type able to exercise such dominating control? One of the important reasons for the characteristics of the typical labor leader in the United States undoubtedly grows out of the great diversity found in the ranks of American labor. No labor leader in any other country is confronted by "a working class so divided by race, language and the prejudices incidental to these divisions"; and in no other country are the basic industries so thoroughly integrated and under the control of such powerful corporations. Success as a labor leader means ability to obtain for labor those things which all of the discordant labor group desire; and the only common denominator is found in higher wages, shorter hours, better

working conditions, jobs for union men, and similar tangible and immediate results.

Finally, what of the future? Mr. Carlton is not unduly optimistic. Indeed, some of his misgivings are now, unfortunately, being fulfilled—among other things by the character and temper of the present open-shop "drive." It is wisely pointed out that this will not help labor organizations on their way toward a more constructive policy and a higher efficiency.

> If labor is again obliged to devote its strength in fighting strong and aggressive associations of anti-union employers, it can of necessity pay little attention to the bigger, but more impersonal, problems of world peace and democracy.

The author rightly considers the present situation a menacing one. "In the interests of national security and of national betterment," he points out "that those who propose again to assert with firmness the old traditional rights of the employer, or who wish by force to sit on the lid, are playing with dynamite. If, with the return of peace, a definite and united attempt to put organized labor 'in its place' is made by certain great associations of employers, if this large and powerful group dominates the situation after the treaty of peace is signed, and if the federal government be in sympathy with this group, prepare for a social upheaval of unprecedented magnitude. On the other hand, if the government is in sympathy with the aspirations of the labor group, an era of democratization in industry may reasonably be anticipated."

A "genuine democratization of industry" is an imperative necessity, in the author's judgment. With the object of helping to realize this ideal he suggests the calling of a conference "in which the far-sighted employers who are trying out new methods of industrial control and the more conservative and able labor leaders should be brought together along with a group of leading industrial engineers and economists." But if something is not done—"if employers continue to refuse to 'recognize' labor organizations, if they insist upon dictating the terms of employment without consultation with representatives of their employees, and if they insist upon 'Prussianism' in industry, the struggle will be on in unprecedented fury."

NEWCOMB'S INHERITANCE TAX CHARTS AND LIST OF CORPORATIONS

Published by T. Newcomb, 43 Cambridge Place, Brooklyn, N. Y.

Reviewed by Frederick K. Melvin*

Possibly the most valuable feature of this volume of 120 pages is the inclusion of tax charts for each state, District of Columbia, and the federal government. Each of these charts divides the beneficiaries into the various groups provided for by the state laws, states what exemptions, if any, such groups are entitled to under state laws, and records the rate of taxation on all amounts.

The footnotes at the bottom of each of these state charts record the rate for non-residents. Such an arrangement is explicit and helpful.

By way of illustration, the chart of Idaho may be used. In that state the beneficiaries are divided into six groups:

1. Husband, wife, lineal issue, lineal ancestor, adopted child, mutual acknowledged child, or lineal issue of either.
2. Brother, sister, or their descendants, wife, or widow of son, or husband of a daughter.
3. Brother or sister of father or mother, or descendant of either.
4. Brother or sister of grandfather or grandmother, or descendant of either.
5. All others.
6. Charitable, benevolent, educational, or public purposes.

* Economist and Statistician.

The exemptions for these various groups are:

1. $10,000 for widow or minor child and $4,000 for others of the group.
2. $2,000
3. $1,500
4. $1,000
5. $500
6. Exempts all money left for charitable, benevolent, educational, and public purposes.

The rate of taxation is then given for amounts over the exemptions up to $25,000; $25,000 to $50,000; $50,000 to $100,000; $100,000 to $500,000, and last, amounts over $500,000.

Part II of this book lists the corporations—between 1000 and 1100—whose securities are listed on the New York, Boston, and Chicago stock exchanges. Opposite the name of each corporation may be found the state or states in which it is incorporated.

In looking over this list, the reviewer is somewhat surprised at the number of corporations incorporated in several different states, and therefore subject to the inheritance tax of such states. In some instances, this sum must amount to 25 per cent of the market value of the securities at the present rate of taxation. As the tendency at present is to increase the rate of taxation, the amount actually paid will probably be greatly enlarged in the near future.

To business executives and those who invest funds the book will prove to be of great practical value. Ample white space is provided for corrections and changes as may be made by state legislatures from time to time.

READINGS AND PROBLEMS IN STATISTICAL METHODS

By Horace Secrist. xi, 427 pp. The Macmillan Company

Reviewed by Frederick C. Mills*

The world of business has its fads and fancies, its styles and fashions.

Scientific management held the center of the stage for a time, and the efficiency engineer was hailed as the Moses who would lead business out of the wilderness. Somewhat later the problem of personnel was spotlighted, and personnel experts blossomed in great numbers. Today the business statistician is in vogue, and the science of statistics is looked upon as the key to success in business management. But a price has to be paid for popularity.

Many things have been done in the name of "scientific management," which scientifically minded engineers would have none of. Some of the principles of psychology which have seen the light since the study of personnel became popular would cause the spirit of William James to shudder. Significant and highly valuable work has been done in both fields, but the unquestioning public acceptance of the new tools with which scientists have supplied business has given the charlatan a rich field for exploitation. The application of statistical methods to the problems of business has brought with it the same evil effects of sudden popularity and the same opportunities for exploitation which were witnessed in the cases of scientific shop management and scientific study of the personnel problem. Manipulators of business statistics are numerous; but careful, accurate, scientific business statisticians are few in number.

The more cordial, then, is the welcome to be extended to any new source of light, any aid to the development of sound method and careful practice in this field. The effects of popularity have to be opposed by greater insistence upon precise and accurate work. "Readings and Problems in Statistical Methods" is a timely contribution, a weapon to be used in the fight

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against a cheap and ephemeral popularity.

Horace Secrist, who has compiled the materials included in this collection of readings and problems, is Professor of Economics and Statistics at Northwestern University. He is the author of a standard text on the subject which this compilation is designed to supplement, though he looks upon the present volume as constituting an independent treatment of statistical principles. The arrangement of the selections follows that employed in the author's earlier text. The readings are chosen from a wide variety of sources, and include interesting examples of applications of statistical methods in diverse fields. Material is drawn from publications of the United States Census Bureau, the Department of Agriculture, the Bureau of Labor Statistics, and from many private sources. Such a collection is necessarily "spotty," though Mr. Secrist has chosen materials of value and significance.

The chief value of this collection to the business statistician will be found in the examples it affords of the uses to which statistical methods may be put. The methodological abstractions which abound in textbooks are made concrete and real in the wealth of illustration which the author has gathered. The illustrations, moreover, are taken from fields having an interest in themselves to the business man—the business cycle, marketing, railway administration, wage rates, factory output, tariff rates, wholesale price index numbers, etc.

While relatively little space is given to the refinements of statistical method, the selections do not err on the side of oversimplification. The examples portray the careful collection and logical interpretation of facts which business has a right to expect from those who call themselves statisticians.

One statement by the author concerning the uses to which this collection of readings may be put is open to criticism. It cannot be justly said that these diverse materials have been welded into anything constituting "an independent treatment of statistical principles."

Apart from the inherent impossibility of securing a coherent and orderly development of a body of principles in a compilation of selections from scattered sources, there is a very uneven cultivation of different parts of the field in the present volume. The subjects of statistical averages, dispersion and correlation are represented by a limited number of interesting selections, but there is no comprehensive treatment of any of these parts of the science.

This book, therefore, cannot be looked upon as an independent treatise upon statistical methods, but as a valuable supplement to such a treatise, and as a mine of illustrations of the possible uses of statistics.

For the service it renders within these fields, Mr. Secrist's book is a welcome contribution to the cause of scientific statistics.

MY NEIGHBOR THE WORKING MAN

By James Roscoe Day, Chancellor of Syracuse University. 373 pp. The Abingdon Press

REVIEWED BY HURLBUT W. SMITH *

One does not find it difficult to be in accord with the vigorous indictment of the I. W. W. which appears in the book, "My Neighbor the Working Man," by Chancellor James R. Day of Syracuse University.[1]

* Vice-President and Secretary of the L. C. Smith and Brothers Typewriter Company, Syracuse, N. Y.

[1] EDITORIAL NOTE—Since this review was written the announcement has been officially made that Chancellor Day has resigned after 27 years, as the head of Syracuse University. After his successor has been appointed he will devote more of his time to literary work.

To some extent we are all believers in organized labor, but the twelve prominent points which the chancellor brings out on why strikes should be forbidden are worthy of the most careful consideration.

These twelve points are given in the following:

1. A strike should be forbidden because it is a minority attempting to control by conspiracy against majorities.

2. Because it is a body of men which assumes authority over property in which it has no right.

3. Because it is reckless of consequences to the extreme of property destruction and danger to human life.

4. Because it drives out of their employment men who as free American citizens have the right to labor.

5. Because it assumes the right of determining the matter without a vestige of authority from any source whatever.

6. Because it decides the quality of the men applying without regard to the protest of the contractor.

7. Because it involves all business by calling out by sympathetic strikes employees of all trades representing the federation—unjust in the extreme.

8. Because it fixes an arbitrary wage with no discrimination as to the amount of work done, or whether one does a much larger per cent of acceptable service than another.

9. Because the organization limits apprentices and attempts to decrease skilled labor.

10. Because labor insists upon full pay for men good and bad and indifferent, and recognizes no protest by the builder or employer against unfit men.

11. Because a strike is a growing menace to the stability of our country and outrages every source of justice and inculcates in forms new to our institutions loose ideas of loyalty which will work against the peace of the nation.

12. Because the strike and its doctrines are working deplorable mischief among the striking men themselves, stimulating arrogance and carelessness concerning fundamental obligations and citizenship.

These points in general are hard to refute. The chancellor has been close to the American working man because he has worked with him himself and therefore writes in no spirit of antagonism to his organization. Moreover he considers the working man, when he is a true American, the vertebral column of the Republic.

He states the purpose of his book is to serve the country by a better condition in the working world.

The proposal that Congress enact a law that all men who indulge in industrial strikes, or any combination against their fellowmen, should be held to criminal accountability, is too drastic and hardly feasible. However, the public in general would welcome any plan by which no organization could be permitted to tie up any railway or any factory or any building.

If a man is capable of doing good work and more than another at the same task, no millstone should be hung about his neck to prevent him from proving his worth and doing it. How long would business last if it were conducted in that fashion?

The chancellor suggests that the walking delegates should be in the Legislature making sound laws instead of meddling with the business of the world and making it impossible to conduct business or to employ workingmen upon any certain basis.

As a general rule unions move as a body at the exhortation of individuals, whereas they should weigh the points at issue carefully just as corporations and large employers do. Labor organizations take "yes" or "no" votes with little premeditation, so that one-half or more of the workmen concerned often vote without understanding. Yet they control the masses.

Without doubt labor organizations would cause fewer industrial upheavals if they followed the chancellor's suggestions that unions should be "self-improvement" instead of "consolation" societies, that they should not endorse a man for a wage scale for which he is not qualified, nor take up the cause of a member until the employer has a hearing.

The chancellor's suggestion of night schools, community lecture halls, improved tenements, more Americanization work, and greater use of libraries as fields of endeavor for organized labor, also merits consideration.

THE WORKER AND HIS WORK

Edited by Stella S. Center. 350 pp. J. B. Lippincott Company

Reviewed by Christopher Borrow *

In a small volume which has just come to my hand, a woman by the name of Stella Center has compiled a collection of readings in present-day literature selected to show some of the activities by which men and women the world over make a living.

These quotations from contemporary literature, the editor says, have the atmosphere of human philosophy, a sense of warm human relationships, qualities that will bring about an understanding between the theorist cloistered in academic seclusion and the man who "to his hot and constant task is heroically true."

The direct purpose of the compilations is to "portray man at his work"—to turn the pages of the present-day writer and give a moving-picture show of the absorbing spectacle of man at his daily task.

The book is planned for a double audience—for the worker, himself, who desires to get a true perspective of his own hands, and for the oncoming generation that seeks graphic information concerning the aspects of the many vocations that wait the new feet.

This is a happy idea that Miss Center has worked out, and like so many worthwhile things raises the question of why it has never been done before.

As modern industrial life becomes more and more involved and complicated in its divisions and specializations it becomes more and more difficult for the worker to hold a vision not only of the processes, but also of the meaning and reason for his particular task.

A surprising amount of the present-day confusion between the man and his job can be directly traced to this loss of vision. There seems to be something in the nature of man which demands that he have his work within his eye.

Time was when a small boy walking down a village street by the sea could witness most of the processes of industry which clothed and sustained him and his people.

Ships in the harbor were coming from and going to the ports of the seven seas. A woman sat at her spinning wheel under the cool of the maple tree. A cart passed by loaded with oak bark for the tanner's shack at the end of the lane. The ring of the blacksmith's anvil played an obligato at the schoolhouse window. The swimming hole was in the worked-out quarry. The butcher came in the spring for the new-born calf. Bread passed in a direct line from the wheat harvest and the water-mill.

Under such conditions it was not difficult for man or boy to hold a picture of daily work in the hollow of his hand. Life and work were one and the same thing, woof and web.

One planted the grain in the south field because, obviously, in the fall and winter there would be the brick ovens and the empty stomachs demanding bread. The processes of planting, and gathering, and threshing, and grinding, were simply logical steps in the making of the crisp, brown crust and the jug of molasses on a frosty morning. It was a simple thing to comprehend. No one but the village fool could see it with confusion.

John Smith did the plowing because he owned the yoke of oxen. Will Brown did the grinding because he owned the mill—and so it went—a natural division of processes and of development. Man knew his relation to his handwork—its purpose,

* Editorial Note — This book, a collection of vignettes showing workers at work, is from the pens of various men of letters. It is reviewed by a distinguished literary critic who for personal reasons prefers to use a *nom de plume*. These "literary fellows" are harder to handle than are the Bolsheviks, syndicalists, and anarchists who throw monkey wrenches into the machinery of modern industry.

function, methods; and he recognized the relation of his task to that of his neighbor in the doing of the community work.

It is this simple picture of what was meant to be a simple thing that goes out of focus as we intensify life and its industries.

Apparently man shows a strong tendency to get out of focus and out of touch with his work at one and the same time. As industry recedes from the open door at the blacksmith's shop, and the cool of the maple tree, to take its place in more and more involved processes behind grim brick walls, we find our civilization requiring new assurances of its meaning and purpose. Men look up dumbly from the constant making of the pinhead to question the worth of the going and to doubt the reward. A man staggering up from a hole in the ground to bolt his bread, sleep, and stagger back again the next morning, hasn't eyes to see much of anything.

The statement of this old problem does not draw an indictment. It is only those who have the pleasant task of dealing with malleable ideas who venture such indictments.

Men flocked to towns because they liked towns. And the factory walls grew because men liked cheap shoes and cheap tools and cheap beds and rocking-chairs. The phase of the problem one cannot evade is this "like."

As psychologists, or sociologists we may bring varying bits of analysis to the explanation, but we must begin by the recognition of the tendency of man to go to a town. For those who have vest-pocket remedies for deep-chested ailments of civilization there is the first point of diagnosis.

Unfortunately, I have no such remedy. I should probably not be reviewing this book if I had the income of the new and the old quackeries. It is, of course, easy enough for a man to stand at the side of the road and see the confusions. It is a simple task for an economist to trace the gradual change of man's relation to his work. It is after all, only a few hundred years since the human animal arose at day-break to go out after his fish and his skin. It is, after all, only a few hundred years since, if he failed in the individual getting, he lay him down and himself furnished provender for the beasts he hunted. It is, after all, only a few years since man made this attempt at modern industrial organization. It is, of course, a truism to say that we have nothing on our hands but an interesting experimentation in human adjustments.

The years have not been many since man and his work were one and the same thing to man and his work as a thing apart. Without falling into the ruts of an easy optimism we can still believe that we shall work our way through provided we can maintain the vision—the picture of the true foundations, the nature, the function, and the ultimate needs of work.

No man can sit still on a stool and think the thing through in a pleasant evening. The big task is to keep men's eyes in focus. Perhaps, as Miss Center hopes in the introduction to her book, the men and women who are producing the worth-while literature of the day can help us in this task. If we cannot have our picture as close at hand as the village boy, we may at least find a vivid portrayal in this book which she has made.

It is a contribution in the right direction, for no man could pick up this volume and put it down again without having his eyes readjusted to the courage, and thrust, and energy, and romance, and adventure, as well as the confusions of modern industry.

A review of the book demands quotation from one or two of the outstanding selections. We print in part from Arnold Bennett's graphic of a Chicago mail order house:

> On the day of my visit sixty thousand letters had been received, and every executable order contained in these was executed before closing time, by the co-ordinated efforts of over four thousand female employees and over three thousand males. The conception would make Europe dizzy. Imagine a merchant in Moscow trying to inaugurate such a scheme!
>
> A little machine no bigger than a soup-plate will open hundreds of envelopes at once. They are all the same, these envelopes; they have even less individuality than sheep being sheared, but when the contents of one—any one at random—are put into your hand, something human and distinctive is put into your hand. I read the caligraphy on a blue sheet of paper, and it was written by a woman in Wyoming, a neat, earnest, harassed, and possibly rather harassing woman,

and she wanted all sorts of things and wanted them intensely. . . . Then the blue sheet was taken from me and thrust into the system, and therein lost to me. I was taken to a mysteriously rumbling shaft of broad diameter, that pierced all the floors of the house and had trap doors on each floor. And when one of the trap doors was opened I saw packages of all descriptions racing after one another down spiral planes within the shaft. There were several of these shafts—with divisions for mail, express and freight traffic—and packages were ceaselessly racing down all of them, laden with the objects desired by the woman of Wyoming and her fifty-nine-thousand-odd fellow customers of the day. At first it seemed to me impossible that that earnest, impatient woman in Wyoming should get precisely what she wanted; it seemed to me impossible that some mistake should not occur in all that noisy fever of rushing activity. But after I had followed an order, and seen it filled and checked my opinion was that a mistake would be the most miraculous phenomenon in that establishment. I felt reassured on behalf of Wyoming.

In strong contrast to this picture of a mail order house and its note of miraculous modern business efficiency is this sketch of Hamlin Garland's from his chapter on The Last Threshing In The Coulee. I do not know where we could find material better illustrative of the changing moods and processes of human work than in these two extracts of Bennett and Garland.

Both are typically American, and yet but a generation separates them.

All day we hung on the gate, gazing down the road, watching, waiting for the crew, and even after supper, we stood at the windows still hoping to hear the rattle of the ponderous separator. Father explained that the men usually worked all day at one farm and moved after dark and we were just starting to "climb the wooden hill" when we heard a far-off faint halloo. "There they are," shouted father, catching up his old square tin lantern and hurriedly lighting the candle within it. "That's Frank's voice." . . . We were awakened at dawn by the ring beat of the iron mauls as Frank and David drove the stakes to hold the "power" to the ground. The rattle of trace chains, the clash of iron rods, the clang of steel bars, intermixed with the laughter of the men, came sharply through the frosty air, and the smell of sizzling sausage from the kitchen warned us that our busy mother was hurrying the breakfast forward. . . . On a still morning like this the signal could be heard for miles. David called "All Right!" and the cylinder began to hum. In those days the machine was either a J. I. Case or a Buffalo Pitts, and was moved by five pairs of horses attached to a "power" staked to the ground round which they traveled pulling at the ends of long levers or sweeps, and to me the force seemed tremendous. "Tumbling rods" with "knuckle joints" carried the motion to the cylinder, and the driver who stood upon a square platform above the huge, greasy cog-wheels (round which the horses moved) was a grand figure in my eyes.

"Driving to us looked like a pleasant job, but Uncle Frank thought it very tiresome, and I can see now that it was. To stand on that platform all through the long hours of a cold November day, when the cutting wind roared down the valley sweeping the dust and leaves along the road, was work. . . . The three men in command of the machine were set apart as the threshers. William and David alternately fed or tended, that is, one of them fed the grain into the howling cylinder while the other, oil can in hand, watched the sieves, felt of the pinions, and so kept the machine in good order. The feeder's position was the high place to which all boys aspired, and on this day I stood in silent admiration of Uncle David's easy powerful attitudes as he caught and tore with monstrous fury. . . .

At last the call for dinner sounded. The driver began to call, "Whoa there, boys! Steady, Tom!" and to hold his long whip before the eyes of the more spirited of the teams in order to convince them that he really meant "stop." The pitchers stuck their forks up-right in the stack and leaped to the ground. Randal, the hand-cutter, drew from his wrist the looped string of his big knife, the stackers slid down from the straw-pile and a race began among the teamsters to see whose span would be the first unhitched and at the watering trough. . . . The men came in with a rush, and took seats wherever they could find them, and their attack on the boiled potatoes and chicken should have been appalling to the women, but it was not. They enjoyed seeing them eat. Ed Green was prodigious. One cut at a big potato, followed by two stabbing motions, and it was gone. Two bites laid a leg of chicken as bare as a slate pencil. . . . At last even the gauntest of them filled up and left the room and we were free to sit at the "second table."

REVIEWS OF BUSINESS PAMPHLETS

Present-Day Problems. By Arthur Reynolds, President of The Continental and Commercial Bank, Chicago, Ill.

In editorial language, every business executive will read with interest this pamphlet, which for the most part is a review of the steps to be taken in stabilizing business.

It is a discussion of the subject from the viewpoint of the big banker. How little the public knows of the difficulties of the large financial institutions is shown by the following quotation:

> The public can have but little knowledge of the call that has been made upon the mental and physical resources of the banker in planning ways and means to save the business interests of the country. There have been meetings of committees of bankers to outline plans for the extension of old lines of credit and for the advancement of new loans to keep concerns going. There have been consolidations, complete reorganizations, reduction of assets, and losses have been sustained by all concerned, including the bankers. Scheme after scheme has been proposed before a method of refinancing could be found which would be feasible. Those charged with the management of banks have burned midnight oil, poring over the problems of customers of every class. Their officers, experts and accountants have frequently been called away from their regular duties to help work out the problems of customers.

President Reynolds points out the pressure on country banks as follows:

> The country banker, too, has had his problems. They have been very hard ones for him to handle. He was encouraged to expand loans to enable customers to buy government bonds and to increase production. With the severe drop in prices of farm products last fall, the country banker found his loans very heavily expanded and experienced great difficulty in inducing farmers to sell their commodities. At the same time the lowering values greatly reduced his deposits and made it necessary for him to seek additional loans in the centers and at the federal reserve banks.

That the federal reserve system should be unhampered by politics is clearly indicated by the following extract:

> The federal reserve system was created to mobilize the banking reserves of the country and to permit expansion and contraction of credit as business required. It is so well established and so well proved that as a matter of principle it seems to me it should be dissociated from every other government department; it should have the widest possible range for its activities unhampered by any political influence. It can work with government without being dominated by government. Public opinion will safeguard the administration of the system which must be placed beyond suspicion of bureaucratic methods and beyond the play of paternalistic impulses. As a banker, I am a firm believer in the fullest possible play of economic forces.

How taxes have been a hindrance to business is thus shown:

> In sustaining the business situation in the Middle West the banks have encountered hindrances as well as helps. Early in the period of depression it was found that while loans were increasing, deposits were diminishing. With credits frozen, this would be a natural condition. But there was another condition, irritating but unavoidable. Taxes came due with proverbial regularity. Issues of Treasury Certificates were and are periodical. If, as a business nation, we are eager to attain a normal condition—the condition in which the relations of things to one another are to be stable and foreseeable—our productive forces must be able to ascertain with some degree of accuracy what their taxes are to be. At this time taxes are so substantial and their application so uncertain that they must retard the development toward the point of "normalcy"—whatever and wherever that point may be.

Speaking for the bank of which he is the head, Mr. Reynolds calls attention to the fact that the effect of taxes on the deposits of his bank has been a loss at each tax payment period of $14,000,000,000 to $35,000,000,000 deposits with a corresponding increase in borrowings in the Federal Reserve Bank.

The quotations already given indicate the character of the pamphlet which discusses matters equally as important, such as "Facts versus Fancies about Foreign Trade;" "The Problem of Distributing Credit," etc. In conclusion, President

Reynolds emphasizes the fact that the economic conditions of America are fundamentally sound.

The pamphlet may be obtained gratis upon application to the Division of Publications, The Continental and Commercial Bank, Chicago, Illinois.

Cost Accounting For Fruit and Vegetable Canners. By Frank Palmer Brown, Pratt-Low Preserving Company, Santa Clara, Cal. National Association of Cost Accountants, Bush Terminal Building, 130 West 42 St., New York City.

This pamphlet deals with the cost problems of the canner who manufactures a variety of products and who as a consequence has cost problems more or less peculiar to his own operations.

The canner has two chief problems; one is the finding of the actual costs for the season that is finished, while the other is the problem of estimating future costs.

> Practically all canned fruits and vegetables are sold "future," and it is therefore necessary for the canner to establish his past costs as accurately as possible in order that he may have a sound basis upon which to base his estimates.

The chief problems that arise in cost accounting for cans, green product, sugar, fuel, direct factory labor, cases, labels, warehouse labor, and indirect or general expense are discussed.

The writer offers the following suggestion for treating the waste of cans:

> Inasmuch as there are always some cans wasted through smashing in process, poor sealing, or some similar cause, it was necessary to determine the tons from this source. This is done by comparing the cans used with the good cans actually packed. The waste for each size should be determined on a percentage basis, and the net unit costs increased to take care of such waste.

One interesting section of the article is the outline of apportioning the cost of fruit per grade, and the method of arriving at the cost per No. 2½ dozen cans for each grade. The unit for calculating canned fruit costs is one dozen cans. Predetermined or estimated cost schedules are also worked out on this basis. The method of treating differences between actual and predetermined or estimated costs is mentioned. The writer thus favors treating fuel as a direct item of expense and not as an indirect or general expense:

> In fruit and vegetable cost accounting, without doubt, the most difficult individual element to determine accurately is factory labor, especially where a factory is working on several different kinds of fruit at the same time.

However, the writer outlines the schedule method of arriving at factory labor costs.

The writer says:

> The primary consideration, in a cost system for canners, is the establishment of sound bases through an analysis of past costs. With these as a foundation, combined with careful judgment, estimates of future costs should be very accurate and should at the end of the year show very little variation from actual costs, which after all is the ultimate test of any cost finding system.

A change in the basis of calculating costs is commented on as follows:

> The direct factory labor cost covers the labor expense from the time the raw product is received until the filled cans, sealed and cooked, are stacked, unlabeled, in the warehouse. At this point there is a change in the basis on which the costs for the season or year are figured. Up to this point the costs have dealt with the pack of a single season and the various items of expense have been spread over the pack alone. After the cans are stacked in the warehouse, however, the expenses are based on the total shipments for the year, rather than on the pack, as the carryover at both ends of the year must be taken into consideration, because it is very seldom that a canner who makes a sizable pack finds his warehouse clean at the end of his fiscal year.

An appendix to the article prepared by the Research Department of the National Association of Cost Accountants consists of summaries of the uniform systems of the National Canners' Association.

These uniform systems are entitled:

> Special Bulletin No. 2 (December 1917) A Classification of Accounts for Canners who manufacture one line of canned goods at one factory only and Special Bulletin No. 3 (January, 1920) A Classification of Accounts for Canners who manufacture two or more lines of canned goods or operate two or more factories.

To some extent, Mr. Brown's article and these uniform systems supplement one another. The systems are devoted chiefly to outlining the actual technique of cannery accounting. There is

not much reference to general principles. Mr. Brown's article deals chiefly with one phase of the subject—manufacturing costs with particular reference to fundamental principles rather than accounting technique. It is rather interesting to note that there are no serious inconsistencies or differences of opinion in these two treatments of the subject, although they are written from entirely different angles and with different objects in view.

Procedure in Paying the German Indemnity. By B. M. Anderson, Jr., Ph.D. Economist of the Chase National Bank, New York City.

This economic bulletin published by the Chase National Bank of New York City will appeal to those executives giving serious thought to the process of payment of the German indemnity.

In the opinion of Dr. Anderson, the process of payment does not involve a reduction of purchases by the French, British, and Belgian peoples of their own products. To the extent they receive payments from Germany the total of their national income is increased.

Considerable space is devoted to overproduction versus maladjustment.

The appendix emphasizes the point that in the process of indemnity payment, the first financial step must be taxation in Germany.

Dr. Anderson concludes:

> The basic physical fact is that Germany must produce more than she consumes, creating a surplus for the indemnity. The policy of internal loans and of borrowing from the Reichsbank, which Germany has followed since the Armistice, has worked in a diametrically opposite direction. Germany has probably consumed more than she has produced since the Armistice, through the dissipation of such liquid capital assets as she has had—a process made easy by the gigantic fiscal deficits and the enormous multiplication of bank notes. Taxation is essential to reverse this process. The state must limit its internal expenditures to what it can subtract by taxes from the real income of the German people. The indemnity must be paid out of the excess of the taxes over internal government expenditure. There may well be times in the future, after German currency is rehabilitated and a sound fiscal system established, when it may temporarily be convenient for the government to borrow from its people, in anticipation of later taxes, to make certain payments on the indemnity. But the first step must be the restoration of public finance, and virtually the whole of the indemnity payments through the long period of thirty to forty-two years must come out of current taxation.

Collective Bargaining. University of North Carolina, Chapel Hill, North Carolina.

The various schools of business administration connected with American universities are doing constructive work in promoting the distribution of business literature.

While this bulletin is compiled primarily to supply material for debates on the subject of collective bargaining, it does give the executive a résumé of some of the best material which has appeared on this important topic.

Those who desire a copy of this pamphlet should request Extension Series No. 40.

The Preparation and Use of Financial Statements. Illinois Manufacturers' Costs Association, 76 West Monroe Street, Chicago, Illinois.

The importance of this pamphlet can best be shown by listing the members of the committee appointed by The Illinois Manufacturers' Costs Association to standardize the balance sheet. This committee which is responsible for this pamphlet consists of the following members:

J. H. Bliss, Chairman, Swift and Company
O. N. Lindahl, Universal Portland Cement Company
H. G. Hook, Stewart-Warner Speedometer Corporation
C. V. Fargo, Vesta Battery Corporation
T. W. Howard, Griffenhagen and Associates

The aims of this business brochure are two in number. In the first place, it suggests methods and forms for the presentation of financial statements which correctly portray the financial condition of an industry. In the second place, it aims through a discussion of the classification of balance sheet accounts to promote a better understanding of the principles that underly the handling of such accounts.

It is not too much to say that when financial statements are prepared in accordance with the suggestions given in this pamphlet they should give business executives that information which will best help them in guiding their business through the present period of readjustment. Especially suggestive is the form of analytical balance sheet with which the pamphlet concludes.

CHRONICLE AND COMMENT

INDUSTRIAL COURT

My dear Mr. Lee:

Thank you very much for the review you were good enough to give to "The Party of The Third Part" in *Administration* for June.

I am sending you the decision of the supreme court holding the law constitutional. It is just out. You might make use of the following facts for the purpose of bringing the industrial court up to date.

The law has now been upon the statute books of Kansas for fifteen months. There have come before the court twenty-eight causes involving labor and capital. Of these, twenty-six have been accepted as satisfactory both to capital and to labor. I do not think you will find many courts with a better record than that.

The court has probably been of more interest to the mining district than any other, since it was the crisis in the mining district which brought on the special session of the legislature that adopted the law. If you judge this law by its accomplishments in that district, you get a very gratifying reaction.

The state mining engineer has recently issued an official report, comparing the production of 1919, the year before the industrial court law was passed, and 1920, during practically all of which year the industrial court law was operating.

In the Pittsburgh district alone there was an increased production this year over last of 900,000 tons, and this task was performed by 500 fewer miners than were employed in 1919. In other words, 10,500 miners, working under conditions created by the new law, produced 900,000 tons of coal more than 11,000 miners produced in 1919.

In addition to this, the 10,500 miners drew $4,000,000 more in wages in 1920 than 11,000 miners drew in 1919. The record was made by reason of the fact that in 1919 the average working days were 141. Last year they ran something over 200.

In 1919 there was an average of over 13 strikes per month in various mines. During the last year there were only 2 small strikes, involving altogether less than a thousand men, called by Alexander Howat, the president of the district, to test the law.

The law has produced a new spirit of contentment, a greater prosperity than they have had before, and a stabilization in production. It is rapidly gaining the confidence of the miners.

There have been two elections—one a general primary election and the other a general election, and one session of the legislature since the law was placed upon the statute books. The enemies of the law fought it in both elections, seeking to elect to the legislature and to the governor's chair men who would be unfriendly to the court. They failed both in the primaries and the general election, and when the legislature met they sought again to bring influence to bear which would cripple the court. Instead of that the court was strengthened and today as high a state of expectation waits upon this law as upon any law on the statute books.

If the federal supreme court approves the decision of the state supreme court uttered last week, it means that the Court of Industrial Relations' Act has started a national movement.

Yours sincerely,
(Signed) HENRY J. ALLEN,
Governor of Kansas.

Topeka, Kansas,
June 16, 1921.

INTERNATIONAL RELATIONS

Fred I. Kent, Vice-President of The Bankers' Trust Company of New York City contributed an article to *Administration* for May on the subject, "International Financial Relationships." In it Mr. Kent said:

> There is one great question which has a most important bearing upon our future foreign trade relationships that the American people may be called upon to decide before many months, and that for the good of all concerned should be decided as quickly as possible. Without taking a positive position upon it at the moment, there are certain phases of the question that I believe we should all be thinking about, so that we may be

ready to express our opinion promptly and intelligently when called upon to do so. This question has to do with the proposed cancellation of the Allied indebtedness to the United States.

The suggestion was offered that a clean line of demarkation be drawn between the loans which went directly through to battlefields, while the United States was preparing for war, and those which went for other purposes such as reconstruction work, after the armistice had been signed.

The article aroused considerable interest among the readers of *Administration* if one might judge by the correspondence received. The pivotal point around which most of these letters revolved was whether it was not an absolute impossibility to draw this line of demarkation separating loan funds used for war purposes and loan funds used for reconstruction work.

Without committing itself in any way as to the advisability of any cancellations, *Administration* is in a position to say on the highest authority, and therefore the best informed, that the books have been so kept that such a separation could be made at a comparatively low clerical expense.

THE VICE OF WASTE

"Waste is the national vice of our land, and it is gnawing at the heart of the country's stability and prosperity." Italics is used to emphasize this statement in *Speed-Up*, official publication of the Submarine Boat Corporation.

The editorial continues to say that waste is limited to no one class, color, or creed and the term, "Average American," applies to the business man, manufacturer, professional man, farmer, skilled and unskilled laborers, as well as to other individuals.

"Any form of waste is a crime against the laws of economics."

The greatest wasted material is time. The vicious result of time wasting is aggravating because it is intangible. *Speed-Up* believes that the squandered hour, like a silent thief, robs millions of dollars a year from American industries and the strongest safe presents no obstacle to time-losers in every factory in the land.

The other two wasted commodities are money and material; and while time is incomputable in dollars and cents, money and material are quite tangible. Profligacy, whether by the overrich or the working man, has a weakening influence on the moral fiber of industrial life.

"The so-called pin money that is deducted from each week's envelope in America would pay our national war debt in six months."

As for wasted material the editor states that the average family in Europe will flourish on what the average American family relegates to the waste can.

"Then turn to our industries again," continues the editorial, "and consider the millions of dollars that are lost yearly in the waste of power, light, steam and the destruction of equipment, tools and miscellaneous supplies, through neglectful and incompetent employees."

"The true foundation of national prosperity," concludes the editorial, "is thrift on the part of every citizen."

INDUSTRIAL ENGINEERS

The fall national convention of The Society of Industrial Engineers will be held at Springfield, Mass., October 5, 6, and 7.

The main subject will be "Industrial Stability," covering production, distribution and sales, finance, accounting, and personnel.

CURIOSITY SHOPPERS

"The average drygoodsman will tell you," says *Milapaco*, house-organ of The Milwaukee Lace Paper Company, "that a certain percentage of the women who enter stores are merely 'curiosity shoppers.' "

They do not come in intending to buy, but merely to "look around." When asked if there is anything they would like to have in particular, they invariably reply that there is not and that they are "just looking about." The salesman, at this state, can go no further.

"To stop this kind of a shopper," concludes the writer, "is to interest them and

persuade them to buy. This does not require the services of the efficient salesman, but the prominent display of some attractive article."

INDUSTRIAL DEMOCRACY

Since war-time production has ceased and post-war activity has settled more or less into a state of business depression, one wonders what has happened to the many little industrial democracies set up in manufacturing plants under the stress of a national emergency. In order to ascertain, at first hand, some of the results and the exact present-day status of the Leitch plan of industrial democracy, Walter J. Matherly and Bryan W. Sipe of the University of North Carolina sent a questionnaire to thirty establishments known to have adopted the plan. Although the companies investigated do not by any means exhaust the list of industrial democracies, yet conditions reported by these companies should be typical of the general situation.

The industries to which these representatives of the University of North Carolina sent their questionnaire represented the following enterprises: Five textile manufacturing plants, with products ranging from silk and hosiery to jute and bagging; four machine manufacturing plants; three producers of plumbing fixtures and sanitary supplies; three wood-working or furniture factories; and fifteen concerns distributed among such industries as films, paint, clothing, carpet, stove, and flour manufacturing; retail establishments; and mining and smelting companies.

Such enterprises are widely distributed over the whole United States, being located in the following states: New York, New Jersey, Connecticut, Massachusetts, Pennsylvania, Virginia, North Carolina, South Carolina, Tennessee, Ohio, Indiana, Iowa, Minnesota, and California.

Professors Matherly and Sipe were interested in finding out:

1. The exact status of industrial relations in these plants immediately preceding the adoption of the Leitch plan.
2. The circumstances under which the plan was adopted and the way it was received by the workers.
3. The results achieved under the plan with regard to the relation of the workers to the management and to the unions, and with regard to production.
4. The opinions of executives as to whether the Leitch plan is adequate to bridge the gulf between employers and their employees.
5. What executives think of the future of this plan, and of industrial relations in general.

Accordingly, they so worded their questionnaire as to invoke a free discussion of the various phases of these five topics. They received 29 replies and feel that the results are worth passing on to readers of *Administration* who are interested in the improvement of industrial relations and the progress of industrial reform.

Twenty-one of the concerns answering their questionnaire had not tried any plan whatsoever to bring labor and capital closer together, and had not devised any means to spur their workers on to greater efforts, before the Leitch plan was adopted. Seven of the other nine plants had tried some very simple plans such as bonuses and profit-sharing, while the remaining two were using a miniature form of shop-committee control.

These plans are all much earlier in the development of industrial relations than the Leitch plan and were either abandoned outright in favor of this plan or taken over as part of it. For instance, one of the concerns using the miniature form of the shop-committee expanded the committee into the first House of Representatives under the new plan. The other plant using the shop-committee gave it up because it did not "give the workers enough voice in the management of company affairs."

None of the 29 plants, according to the information received by Matherly and Sipe, had any serious labor troubles before the adoption of this plan. Thirteen reported that they had no labor troubles. Of the 15 others, three had met serious problems of labor turnover; three had found trouble with labor unions; and several had experienced minor labor difficulties. Three had had strikes. So far as the answers indicated, however, none of these 29 establishments had had any labor troubles immediately prior to the adoption of the Leitch plan.

Since the plan came entirely from executives, it is interesting to see how the employees reacted toward it. In most cases, the workers feel that when the management of their factory offers them something that really looks good, a joker is in it somewhere.

Nine executives reported that their workers received the plan with enthusiasm; three, that their labor force received it with suspicion; and six, that their employees received it with lukewarmness. Four answered that about one-third of their workers received the plan with enthusiasm, one-third with suspicion, and one-third with lukewarmness. Two reported that their workers were divided about half and half between lukewarmness and suspicion; two, that their workers were about equally divided between lukewarmness and enthusiasm.

Seventeen concerns informed Matherly and Sipe that members of Houses of Representatives seemed content with their newly acquired power. One reported that its house was not fully co-operative. Another wrote:

> As a body, the House of Representatives seems content; an occasional member tries to reach out.

One company reported that its House had made no demand for larger privileges since there was "no limit to its voice." Another asserted "the House is now very inactive, no initiative at all." An executive of still another plant wrote:

> Our experience is that the House of Representatives tends to become more conservative as it learns about the necessities of the business. There is no indication so far that it tends toward radicalism.

Matherly and Sipe were advised through their questionnaire that in 26 of the plants difficulties arising between men and the company were always settled without delay.

In cases where an investigation must be made before a maladjustment can be corrected or a new policy initiated, the workers have been patient while the investigation was under way. One reported that its workers were willing to await the results of such investigations "in most cases;" one, that its workers were willing to wait "if any unavoidable delay is explained to them"; and two took pains to state that their workers were not only willing to wait, but that "they always accept the results of the procedure established by themselves."

Another indication that workers are generally satisfied with the plan is the fact that, since its installation in the 29 plants from which reports have been received, not once has there been a strike or other labor trouble. In two cases, outside union leaders called strikes which were to have applied to workers in plants operating under the Leitch plan.

The House and Senate of one of these concerns drew up resolutions and sent them to union headquarters, asking that their company be exempt from the strike order. The last paragraph of the resolution read as follows:

> By threatening to call a strike without our approval, you are trying to change our conditions which we repeat are entirely satisfactory. Certainly, if your union is sincere in its claim that it is trying to assist the workers, it can prove it by leaving us alone.

In addition, the House of Representatives of this concern made up 70 dollars among the workers and sent representatives to union headquarters to ask specifically that their plant be exempted from the strike order. By following up this visit with correspondence, the exemption order was received.

A similar situation faced the other plant. Most of its workers were union men. The union had called a general strike. The men in this plant were satisfied and did not want to go out on the comtemplated strike. The House of Representatives drew up the following resolution and sent it to union headquarters:

> In view of the fact that we are entirely contented with working conditions in our plant; with the scale of wages which has been handled satisfactorily in the past by our wage committee and which we feel confident will be handled in the same way in the future; with the hours and the management; and because we know that if we have differences to settle between the management and employees, they are and will be settled through the cornerstones of industrial democracy, which are justice, economy, energy and co-operation, we feel that it would be detrimental to our personal liberties, the welfare of

our families, our institutions, both the plant and industrial democracy, the city of . . . . . at large, and our customers, to go out on a strike.

Thus, this plant also succeeded in avoiding the entanglements of a strike.

From the employers' standpoint, the plan has not been so universally satisfactory. However, in 19 cases employers have found no fault with it. One plant reported that it had found the plan satisfactory "to a certain extent," but intimated a distrust in it by adding, "it has not failed."

Three companies reported flatly that the plan was unsatisfactory. One stated that its workers did not have faith in the figures submitted by the management and that they tended to quarrel among themselves; the second, that the economy dividends were not satisfactory; and the third, that the workmen were not continually interested in it.

A few employers were enthusiastic about the plan. One of these reported that the output had been increased per capita, wastage reduced, quality improved, and interdepartmental co-operation stimulated. A second reported that "many tangible results of considerable value are traceable to its use, but the intangible results are of equal or greater importance." A third cited results as follows:

1. A much better quality of product without any dropping off in quantity.
2. A vast improvement in the spirit of the workers.
3. Innumerable valuable suggestions from our employees.
4. A handsome saving in waste and spoilage.
5. We are certain from present indications that our next benefit will be a reduction in payroll, due to the elimination of unnecessary employees.

To the question as to whether the plan as originally conceived by Mr. Leitch was adequate to bridge the gulf between capital and labor, replies received by Matherly and Sipe include three groups: (1) The executives who thought the plan was adequate; (2) several who deemed it all right if only adapted to local conditions; and (3) those who considered certain features of the plan to be impractical and useless.

As illustrative of the first group, 17 in all, Matherly and Sipe received such unqualified endorsements as: "It is the best plan known;" and "It works perfectly with us."

As representing the second group of answers these investigators report the following statements:

The Leitch plan, like every other plan intended to secure increased co-operation on the part of employees, has to be carefully adapted as regards details to each particular business. In principle it seems to be faultless but like religion, it is hard to apply.

And

The system of the Leitch plan depends upon the way it is introduced and watched by the executives and also upon the enthusiasm the employees display in it. It is not a panacea for all ills by any means, but it is a step in the right direction.

Those who found the plan inadequate sent such comments as: "The plan is too comprehensive for the workers;" "The workers can not understand it, due possibly to ignorance;" "The plan is not satisfactory, but we are not ready to speak of defects;" "We do not believe in any other kind of dividend except that which is based upon individual efficiency, as we know of no collective form of dividend that has been entirely successful."

Because of its recent origin, the plan really has not been thoroughly tested. In the opinion of Matherly and Sipe one must look to the future for a final decision as to whether or not the plan will last. This will depend to a large extent upon the part that labor decides it should play in the management of industrial enterprises. Therefore as a final part of the questionnaire, executives were asked to give an opinion as to the future of the Leitch plan and industrial relations in general. These speculative opinions, as the quotations given below will show, may be divided into three classes: First, those who feel that labor does not desire a voice in the management of industry beyond that given by the Leitch plan.

We do not think that labor will keep encroaching on management and capital until it acquires a voice in determining the financial, sales, technical and other problems of industry. The aver-

age mentality of labor cannot grasp such problems. Satisfied labor will not seek such fields.

If industrial democracy prevails, there is no occasion or desire for labor to assume larger voice in industry. The only solution of the labor problem is co-operation, not antagonism.

I cannot help but feel that if members of any organization are treated squarely—always given a square deal—they will never ask for anything unreasonable. The average worker has no desire to be burdened with managerial or financial problems, all they want to know is that they are treated fairly and have some word in an organization concerning those things with which they come in contact.

Second, those who feel that if the Leitch plan is carefully administered and if right relations are nurtured, the swelling tide of sentiment for real responsibility can be stemmed.

I do not think labor will encroach on management and capital if the system of industrial democracy, as laid out by the John Leitch plan, is followed. Of course, success of the system depends upon the heads of the business and the amount of time given to it and also depends upon the amount of education the employees receive under same.

As you know, many writers and publicists believe that the logical outcome of the present agitation will be that labor will not be satisfied until it has a determining voice in all problems relating to certain industries. Their interest at present is more direct and is largely limited to working conditions; in getting fairer wages; in having reasonably comfortable homes; and an opportunity to educate their children. They do appreciate it if these conditions are such as to justify their taking pride in them. If these conditions are indifferent, the wage-earner is bound to be indifferent to his job.

We do not believe that labor will encroach on management and capital to any dangerous degree if they are given a square deal in the problems they bring up for adjustment. On the contrary, responsibility breeds conservatism. But in our plant as well as in any other, it is necessary that a watchful eye be kept on the meetings and their results. If this is done we see no need for fear.

Third, those who feel that labor must eventually be given greater responsibility in managing industrial plants than that comprehended under the Leitch plan.

We believe that labor will soon have to be given a voice in all matters relating to industry. It is in line with the tendency of past years to consider the worker more and more as having rights, or at least as more than a machine which can be left idle at any moment at the whim of the management. He wants to know why, and if he is made to suffer for weeks because capital is trying to get too large a profit, or has too small a sales force, or is short of working capital, or does not have the best types of machines from the workers' viewpoint, the workers are going to know why.

It is our opinion that labor will continue to hold down production and make unreasonable demands until they are given a voice in the management. When business gets back to normal we believe we will see a decided increase in labor demands for participation in the management of industry after they have assimilated the more direct problems as sales, technical, and last, the financial problems. We believe after the men have participated in the other problems and gained sufficient confidence, that their demands to take part in the financial problems will be very insistent, even ending in their becoming financially interested and participating in the profits therefrom. Our reason for believing this is that our whole educational and governmental system tends that way. The socialistic views of the world as expressed in print stimulate the progress in this direction, and this apparently must result in the natural economic laws absorbing the socialistic trend.

In connection with these opinions as to the future of industrial democracy, Matherly and Sipe wish to call attention to the fact that these are presidents and general managers of large industrial establishments who have expressed their views, and that on account of their positions in the industrial world they have taken conservative stands and made conservative evaluations.

OPEN OR CLOSED SHOP

Frankly and simply *Bindery Talk* presents to the employees of Gane Brothers & Lane the problem of the "open" or "closed" shop.

The law of supply and demand determines the wages of labor, the cost of production, and the price of goods, the editor believes. This same law therefore determines whether an organization should have the closed or open shop.

He emphasizes his point as follows:

When the demand for labor exceeds the supply, the "closed" shop is naturally strengthened, but

when the supply exceeds the demand, the "open" shop idea spreads. It is not probable that the question will ever be completely settled.

The question resolves itself about the point—How can a more friendly attitude between employer and employee be established? Instead of the employee turning to the labor leader as his friend in time of difficulty, *Bindery Talk* feels that the employer should be the friend in all cases to whom the employee turns for help.

To avoid conflict both sides should be careful not to press temporary advantage too far.

ALLOCATION OF SHRINKAGE

Administration,
New York City.

Gentlemen:

Through your magazine or by letter if you care to do so, I would like to have your answer to this question.

I am interested in a manufacturing proposition and find it has been the custom of this company to reserve 2 per cent for shrinkage in value of inventory on the basis of the cost of material going into sales.

My contention is that the basis for calculating this reserve would be the value of material ordered into process from rough stores. I contend further that this is a shop burden item and not a direct charge to Profit and Loss.

Your views on the subject will be greatly appreciated.

Very truly yours,
(Signed) Herbert C. Stuessy.
Cleveland, Ohio.

My dear Mr. Stuessy:

If the shrinkage is due to change in market price, I should say that the loss should be treated as a financial management item and not a cost of manufacture. In that case the charge would be made to a proper section of the Profit and Loss account rather than to the manufacturing section of the Profit and Loss account.

I judge, however, from your statement of the case that you have in mind the shrinkage value of inventory occasioned by inaccuracies in weights and measurements and perhaps depreciation and possibly obsolescence. In this latter case, I should by all means treat the shrinkage as a shop burden item to be distributed either on the same basis as general burden, or on an equitable basis as a separate item, perhaps making the distribution on the basis of the cost of materials going into process.

I believe that your contention as to the time of incidence of this cost is correct. There is no more relation between a cost of this sort and the period in which the sale is made than there is between the labor cost and the period in which the sale is made. Costs are incurred at the time of manufacture and not at the time of sale. The reserve for a shrinkage of this sort should, therefore, be based on the material ordered into process from rough stores rather than on the cost of material going into sales. Costs begin when the manufacturing process begins. The charge to manufacturing which constitutes the offset to the reserve for shrinkage should be allocated in the period of manufacture and not in the period of sales.

Very truly yours,
Roy B. Kester.

OLD CUSTOMERS' WEEK

"Old Customers' Week" is celebrated in a city in Minnesota in such a way as to utilize the old customer as a drawing card for increased trade.

"All old-time customers," says *The Bulletin*, published by Lindeke, Warner and Sons, "are invited to be present to meet other old-timers of the same town or neighboring towns, with the store salesforce on hand to make things comfortable for the visitors."

Of course before the actual event the store sends out announcements and advertising to the entire list of customers. During the last "Old Customers' Week" the store paper contained pictures of some of the store's oldest customers, with a number of testimonials from the oldest and most prominent customers.

The important feature of this event is a contest to determine the oldest person visiting the store during the "week" who has traded with the store 10 years or more; and the winner is featured in the store paper and in other special announcements.

ADMINISTRATION

The Journal of Business Analysis and Control

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METHODS OF BUSINESS REPORTING

BY H. PARKER WILLIS *

NEW applications of economic and statistical science are being steadily found. Within recent years these subjects have been for the first time extensively used in practice as aids to business. One field in which they have, during the past decade, taken deep root, is that of business reporting or forecasting, the two phases of work being popularly confused or regarded as synonymous. A time has come when there is need for recognition of underlying principles and the gradual clearing away of misconceptions.

The first piece of work to be seriously undertaken is that of determining the scope and method of business reporting. Here, as in other fields of scientific thought, an introductory or experimental period was unavoidable. In few, if any, sciences is it possible to start at the outset with a careful analysis of scope and method, or at all events to gain any success in developing them according to previously mapped out lines. Some experimental work must be done, mistakes must be made and paid for, and a basis of knowledge must be acquired by experience.

Business reporting has now passed through the experimental early stages and in some cases has made an advance beyond them. It is, therefore, feasible to reach at least preliminary conclusions regarding its true field and to indicate the lines or directions in which false beginnings have probably been made and which, therefore, must be regarded as undesirable or unfruitful. In so doing there should be no disposition or inclination to undervalue the work of the pioneers in the field.

II

Much indeed may be learned from a careful historical survey of early efforts in business reporting not only with regard to what may not, but also with reference to what may, be accomplished. It is in line with other beginnings in inquiries later to become scientific, that the first attempts were of a commercial nature and that in this as in other fields of study there should have been efforts to make money by assuming to furnish more or less exact forecasts of the future through use of which individuals could themselves become prosperous. Many of the business reporting services of

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the past 15 or 20 years have centered themselves around charts or graphs which were intended to represent fundamentals of business. It was seldom very carefully explained what these fundamentals were or precisely what they meant, but it was assumed that the "series" of statistics to be charted had been wisely chosen and that they represented something. Thus bank clearings were always included in such charts as an "index of the activity of business" although there were usually no explanations of the reasons why the choice had thus been made, or any statements of what were the limitations upon the inferences to be drawn from the showing.

As little reasoning was devoted to the support of the thought that when one of the "curves" on a "graph" "pointed" in a certain direction it would, as the weeks or months passed, actually progress in that direction and so afford a "guide" to the probable drift of the trade or type of value which was being studied. In this way various "services" were built up, and in some the promise was frankly made that a study of the "graphs" or "statistics" furnished would lay the foundation of successful stock market speculation or would show exactly what securities ought to be bought by investors who were holding for an advance. Extravagant claims and promises by promoters, onslaughts of salesmen, and failure of prediction to be verified gradually gave the whole undertaking a bad name. The real usefulness of the idea of business reporting, however, has not been lost sight of in spite of the various blemishes that can thus be noted, most of them resulting from the attempt to commercialize this type of investigation; and it has remained true that the interest of the business community in the whole undertaking has distinctly grown. This is shown by the fact that the number of business reports regularly issued has greatly increased, and that whereas a number of commercial services regularly sold to subscribers continue to exist and to flourish, a far greater number of freely distributed services have come into existence. Of the latter the greater majority are impressionistic and make no pretense to scientific accuracy. They simply afford a photograph of opinion and pretend to do little more. This opinion may be derived from a great number of sources or from a very few.

Some banks situated in the agricultural regions and others in manufacturing or financial districts issue a monthly letter embodying their own views and those of their correspondents, who may be numerous or comparatively few in number. Even in the commercial services a good deal of the matter furnished is frankly impressionistic. Business, for example, will be classed in various districts as "excellent," "good," "fair," or "poor"—expressions which have no meaning except in connection with the significance assigned to them by the user. In all other cases an effort may be made to reduce the judgment of the reader to a numerical basis, but even this is frequently (and somewhat necessarily) based upon opinion. Thus, for example, the crop reports of the Department of Agriculture are furnished on the numerical or percentage basis, but the correspondents have no means of ascertaining, except through their own opinion, whether they should report the condition of a crop in a certain county as 75 per cent of normal or 78 per cent. Interchange of opinions or ideas is always valuable and brings at least an approximation to the truth, but no demonstration is needed to show that business report-

ing of this kind can never go very far in the direction of real accuracy.

III

A more scientific or careful view of business forecasting has been developed within late years by economists who having accepted what is called the theory of business cycles have sought to forecast the duration of the various phases of the cycle. According to this view as advanced by some, there is a wave-like movement of industry and trade. Business increases in volume and intensity until it reaches a peak from which there is a gradual recession to low level with later resumption of the upward movement. Assuming that this view of the situation was correct, the question of measuring or appraising the movement of business was a detail. Statistics relating to "basic" business activities were selected and from them "business indexes" were computed, and it was asserted that "charts" or "graphs" showing the movement of the "indexes" could be "interpreted" in such a way as to show approximately the point in the wave at which business was situated. Since the business world was to pass through the same wave movement in the future that it had passed through in former years, there was a possibility at any given time of ascertaining about where on the upward or downward movement the trade world then was. The business cycle theory has had hard work to maintain itself, unforeseen circumstances usually giving an unexpected twist to the curves, and probably will have a still harder time in the future. Practically it has perhaps tended to sustain the claims of those who wanted to assert the power to predict the future and so to trade upon the knowledge.

A real service, however, has resulted from the early recognition that if any real use is to be made of the business cycle idea it must be founded upon very exact and representative "indexes" and that these have not been available. Therefore, there has been for some years past a disposition to develop, if possible, better and more thorough indexes of business. While the desire for more and better business indexes was praiseworthy and helpful, it must be conceded that economists have made hardly any practical progress in developing new indexes. Not until within the very recent past has there been definite effort to ascertain what can be done toward mapping out and obtaining such indexes of business conditions. The control of industry which prevailed during the war threw considerable light upon what could actually be accomplished in this direction, and pointed to the possibility of attaining a much more exact knowledge of current industrial conditions, providing business men would co-operate to that end.

Two problems have thus presented themselves from a scientific standpoint: that of ascertaining the indexes which would be most useful, and that of devising ways and means of collecting them in such a manner as to avoid the suggestion of undue inquiry into individual business operations so as to insure a combined or "massed" treatment of all facts that were placed in the hands of the reporting service, especially avoiding the publication of any data that could serve to give an undue advantage to competitors. It is true that progress in the direction of getting the co-operation of the business man has been slow, but, on the other hand, there has been very decided advance toward agreement as to the type of business indexes which

are likely to be most useful. Agreement, too, has fairly well been reached as to the directions in which it is profitable to work and as to those in which comparatively little can be done.

IV

Experience during the past few years has shown quite clearly about what can be done in the way of developing business indexes of the kind herein referred to. We may summarize them somewhat as follows:

1. Indexes showing the condition of banking. These are obtained through reports from representative banks furnished at sufficiently frequent intervals to afford knowledge of the movement of basic credits. The federal reserve system has naturally taken the lead in this regard first by publishing its weekly statement showing the condition of all the federal reserve banks, and second by publishing weekly for the preceding week a statement reflecting the condition of representative banks in 100 selected cities. The latter group of banks is believed to represent about 40 per cent of the entire banking strength of the country so that a substantially good index of banking conditions can be constructed on these figures.

2. Indexes showing activity of credit. Three years ago the Federal Reserve Board, at about the same time as the American Bankers Association, undertook to obtain from the clearing house banks of the country a statement to be furnished weekly showing the debits to individual deposit accounts, for the week to which the report related. These reports were vastly superior to the old clearing house figures since the latter related only to items actually passing through the clearing house while the new figures gave a clear-cut notion of the total volume of business at the banks reporting, both that which passes through the clearing house and that which is cleared or paid by entries on the books of the various banks. The variations of this figure show the degree in which credit is being used and thus afford an excellent index or measure of the activity of business.

3. Production indexes. Some advance in the direction of production indexes has been made but the difficulties in the way have been so great as to prevent the attainment of anything more than a bare beginning in the way of statistical analyses of output. The work which has been done under this head may be classed in three general groups as statistics of manufacturing, statistics of stocks on hand, and statistics of unfilled orders. It has never been possible to overcome the reluctance of business men to supply data of this kind either because they were fearful of the result of the information which they might furnish to competitors concerning their businesses or because they did not believe that the trouble and inconvenience involved in the service was warranted. Nevertheless production statistics of two kinds have been obtained for at least a limited number of industries. These include figures of actual output which are best represented by the statistics of the Department of Agriculture for crop yield, and on a much more limited scale by those of the Federal Reserve Board for manufactures.

Perhaps the best examples of what the board has done in the latter direction are the more or less complete returns obtained each month from cotton finishers and from knit-goods manufacturers. An allied class of statistics is seen in the reports of the Census Bureau for cotton-ginning and for textile machinery occupied or idle. From the standpoint of private enterprise the unfilled order reports of the United States Steel Corporation are probably the best illustration of what has been done in getting reports bearing on the future.

4. Transportation indexes. By transportation indexes are meant figures showing the gross movement of goods, and furnishing information, therefore, as to the degree of activity in shipment. This presumably throws light upon the business activity of the country, since without orders giving rise to shipments the goods would not move. The ton mileage statistics of the Interstate Commerce Commission furnish perhaps the best illustration of

what has been done in this direction although it is to be regretted that they have for some time past been so much retarded that they do not throw much light upon the current situation and are therefore of less direct significance as an index to present business activity. In the same group should also be placed statistics of vessels entering and leaving port which are available in practically complete form and in a fairly up-to-date condition, as well as the statistics of our foreign trade which are usually about thirty days behind.

5. Indexes of commercial credit. The figures for commercial failures which have for many years been actively prepared by the commercial agencies have frequently been regarded as of some value from the standpoint of business study and doubtless have a certain limited worth. They are, however, for obvious reasons not primarily valuable for the study of actual prospects among live businesses. It has therefore long been felt that indexes of collections and of the duration of credit ought to be developed. The Federal Reserve Board about two years ago undertook the effort to obtain such a collection index and succeeded in enlisting the cooperation of the National Credit Men's Association.

In this, however, practcailly no results have been obtained owing to the difficulty of inducing business men to furnish trustworthy reports in dollars showing receipts for the month or week, amounts carried on the books for periods up to and over 30 days and so forth. The gathering of these data is entirely feasible and only awaits the co-operation of a reasonable number of representative business houses, but it must be admitted that up to date but little progress has been made. The utility of such an index is quite evident since the period of credit in mercantile business is a very sensitive indicator of existing trade conditions and reflects almost at once, in the form of credits which are extended to the community, a lessened ability to pay cash.

6. Indexes of consumption or purchasing power. While efforts have been made to test the consumptive power of the community in various ways no definite measure of the sort has been actually computed until very recent years. The work done by the Federal Reserve Board may be taken as a sample of this kind of inquiry. For three years past the board has obtained from a steadily increasing number of large retail stores throughout the country figures designed to show the stocks on hand, volume of sales and orders placed, the purpose being to exhibit in the form of percentages of the previous, or of a normal, year the actual activity of business as illustrated by the consumers' demands for goods. A similar index number for the wholesale trade has been computed in some federal reserve districts by substantially similar methods, but the undertaking so far as wholesale trade is concerned is still in its initial stage.

7. Price indexes. These on the whole are the most carefully prepared and most easily obtainable business indexes that are available. The collecting of prices and the establishment of index numbers based upon them has been in progress for a good while and the work of the past two decades has resulted in improving the technique of price compilation and the accuracy of price study in a very material degree. In the United States we have had for many years past the price indexes prepared by the Bureau of Labor Statistics while within the past three years the Federal Reserve Board has added an index number of its own in part based upon the number of the Bureau of Labor Statistics and intended for making international comparisons. There are other compilations of prices and index numbers in the United States, some five or six additional numbers being well known and recognized, while in addition to these there are many of a more limited scope applicable to special trade or local conditions. Abroad, index numbers compiled upon varying plans are found in the principal foreign countries. So far as prices are concerned progress toward the measurement of changes and the analysis of the effect of such changes upon general business has been quite pronounced, the degree of advancement in this field being doubtless considerably greater than that which has been attained in most of the other groups of business indexes to which

reference has been made—bank condition and activity of credit figures affording, however, a very decided exception.

V

While it would be possible to enumerate various other indexes of business conditions enough has been said to show the general character of the thought which underlies the whole series of statistics. In brief the purpose is to obtain representative or normal figures for a period which may be taken as a base, and then to compute in percentages of these a "relative" or "index" number which will serve to show the position of the particular trade or industry or branch of activity at a given time as contrasted with this supposedly normal base period. If such figures could be obtained with sufficient accuracy and reliability so that they might be taken as representative, there would then be in hand figures showing such movements as the activity of credit, the volume of banking accommodation, the duration of the credit period in trade, the activity of transportation, the volume of output in basic industries, prices, and a variety of others. The scientific student of current economic conditions would then be equipped with the data needed by him for the careful analysis of business tendencies.

From such analysis he would be reasonably able to draw inferences regarding the direction in which business was moving, and from these it would be possible to supply, not forecasts of the future, but positive advice as to how to shape business activity and policy in order to combat unwholesome or dangerous tendencies already observable. This is the true field of business reporting and it is along this line that its success will be most greatly realized. It has never had and never will have much success as commercial astrology nor will it be able to forecast with astronomical exactness the movements of the commercial planets and constellations. It is rather a kind of business diagnosis, and its best results are seen in the form of reports which throw light upon actual conditions and tendencies, suggesting changes in the régime of different branches of trade, and in giving a general outline of work to be done in order to maintain business health.

It is clear from what has been said that the use of business reports or indexes may be quite as serious and difficult a piece of work as their preparation. It is in fact a scientific study and involves at least the following branches of analysis:

1. Ascertainment of the significance to business of given indexes of conditions, and explanation of the true meaning of changes in percentual relationships.

2. Study and explanation of the time and conditions under which a given index begins to reflect important results. For example, in many branches of activity there is a certain "lag" or interval between the time when a given phase of business begins to change and the time when that alteration makes itself felt as a real factor.

3. Explanation of the interaction of business conditions upon one another, e.g., whether a decline in debits to individual deposit accounts is due to a lessening in the activity of business or a cause thereof.

4. In general, explanation of the meaning of movements in the different indexes not only when taken individually but also when considered in connection with other business indexes which are likewise changing.

VI

How far can the business reporting service go in predicting the future? This question is constantly asked by

those who are requested to aid in the work of gathering and distributing business information. Where the question is not expressly put in this form it is implied, and often is coupled with the statement that the business world is not attracted by ancient history but is concerned only with current events, or if possible correct forecasts of the future. Unless the latter can be expected at a reasonably early date the business world, say these spokesmen of the practical, are "not interested."

This is a matter as to which there should be entire frankness. Business operations are essentially scientific in character. They are obedient to economic laws which control them. These laws are susceptible of statement and ascertainment. It is practicable with the means at our disposal to obtain a fairly definite idea of prevailing conditions at any given moment and to subject them to analysis. Such investigations into existing business conditions may permit students of the situation, business men, and bankers to compare conditions as thus depicted with the conditions of former times, thereby enabling them to draw reasonable inferences regarding the result of existing conditions and so to guide their conduct accordingly. It should be emphasized, however, that no business reporting service, however careful, scientific and incisive, will permit accurate predictions to be made concerning future events.

Business reporting has not reached the point at which it can forecast the future more than in vague general terms, and all claims to the contrary are simple quackery. The pretentious business cycle theory assumes the ability to state about what point in the upward or downward "wave" or "curve" the business or commercial world has reached at any given moment, but even this is based only on comparisons with former waves or cycles. Even at best—at its own valuation—the theory would permit little or nothing in the way of application to any given business or trade. The generalizations based on this theory have always been found erroneous in practice and of no direct value. The theory itself, however, is, as already seen, of doubtful worth, and questionable scientific validity in the form frequently employed and to which reference is made in this article.

It is, of course, the application of the statistical method to the business cycle with the explicit intention of predicting the future which is the objectionable feature rather than the mere belief in a business cycle. In the narrow sense the cycle is merely the periodic recurrence of prosperity and depression. There is nothing in it to alter or modify the conclusions already arrived at. Therefore, in business reporting such generalizations as to the future should be completely abstained from and the service of the business analyst or student should be merely that of ascertaining facts and of setting them forth in their salient relationships. That these facts should be arranged in such a way as to show tendencies is merely another statement of the need for scientific classification and adjustment of data.

What good business reporting does is to exhibit in comprehensible form the true status of an industry. It is not of much importance to know that at any given moment the expected output of winter wheat in a given district is 10,000,000 bushels, but the knowledge that this output is practically identical with the 10-year average for that region and that the national output is expected to be say 25 per cent below average or normal is of considerably more significance.

In any particular line of manufacture the stock on hand in factories as compared with capacity production and the rate at which the product is moving into the hands of distributors or consumers is a basic business fact. Its value to the business man himself lies in the knowledge it gives regarding the visible supply, the strength of demand, and consequently the probable field for new output.

VII

A field of usefulness in connection with business reporting and business indexing generally is found in the credit analysis work of our banks. Although the establishment of fully equipped scientific credit departments is a matter of comparatively recent development in the United States, hardly any such department going back more than 25 years, their progress has been rapid and there is today a growing recognition of the fact that an entirely new type of credit study is called for in banking. It was natural that during the early years of our credit study in banks, attention should be concentrated upon the condition of the individual business, and the chief activity of the department should be devoted to the ascertainment of facts relating to the condition of the borrower or prospective customer.

Credit study in other words was based upon the idea that the desirability of given concerns as borrowers could be individually tested. As we have gone further in the investigation of the subject, we have naturally come to the conclusion that this is hardly true. Borrowers may be thoroughly good risks under certain business conditions and very poor ones under others. It is also recognized in an increasing degree that the bank is itself in no small measure responsible for the goodness of credit in a particular line of trade. By granting too much credit in that line it tends to stimulate business development there and may bring about overproduction or over-accumulation of goods.

A broad study of business conditions is the only safe guide to the credit department of the bank or to the bank officer in reaching a conclusion as to how far it is safe to go in furnishing accommodation to a particular line of trade or industry. Even broader than this, is the decision which must be reached as to whether credit itself is being too freely extended in the aggregate. This type of study is especially important to federal reserve banks and indeed to all banks who exercise (as many of the larger city banks do) some of the functions of central banking. Knowledge of business conditions in the larger sense and particularly of business conditions as affecting the given lines of trade is, however, a matter of everyday business importance to the credit department of the large bank and its significance in that connection is, as already stated, more fully recognized today than ever before. Such general studies can be carried on only through the agency of sound and scientific business reporting. This is one specific example of the actual and practical use that is being made of business condition reports in current commercial life. They are from the banker's standpoint today an absolute necessity as the foundation of credit study, and there is a large field within which they may be specialized and amplified for the purpose of bringing their evidence of a general or broad sort to bear in the analysis of particular problems existing in narrower business and financial fields.

VIII

This great field of study might conceivably be dealt with by one or more of several agencies. First among these would naturally seem to be the government. The collection of statistics by the various branches of the government, however, is notoriously slow, and is increased by the responsibility resting upon them for extreme accuracy in the data presented. In the past, political tricksters have used government reports for their own ends to show "prosperity" or the reverse, and the government type of report has lost caste. Probably it will be hard to regain public confidence.

Possibly some university or scientific institution, single-minded in purpose and above the suspicion of self-interest, might carry on this work. We have, however, had few examples of such study, and scientific institutions in the main have not devoted themselves much to this branch of inquiry. Next would appear to be the individual corporation. While, however, the individual business enterprise may be successful in assembling data for its own use, such data are usually partial, incomplete, and adapted only to its immediate needs. There is always also the competitive aspect, involving doubt as to its single-mindedness. The greater number of banks of the country perhaps are not subject to suspicion of this kind, yet it does nevertheless exist to a greater or lesser degree with respect to privately organized concerns.

These considerations explain why the present national business reporting system of the reserve banks has been inaugurated. From the beginning of the federal reserve system it has seemed that no other institution would be so fortunately situated for gathering scientific information as would the federal reserve banks. They are not governmental in their nature but though they are privately governed and privately operated, they are under governmental supervision and should be above the suspicion of serving any given interest except that of the community as a whole. They are the repositories of much information which is regularly obtained. In their numerous connections through their member banks they should be in the best possible position to obtain not only an intimate view of banking but also the most reliable and up-to-date data with respect to business. On the other hand, the Federal Reserve Board would seem to be the proper agency for assembling the data jointly and severally collected by the federal reserve banks, and for fusing them into a general national review of business conditions. It is upon this theory that the Federal Reserve Board has worked from the beginning in the compilation of its business reports. Much has been done. Some brief references to the work have already been made by way of illustration in previous paragraphs of the present article.

But while the purposes of the system should thus be above suspicion and while the work accomplished has already contributed largely to our knowledge of business facts during the past few years, what has thus far been done has been only a beginning. What is, then, the essential problem by which the federal reserve system and others who work along parallel lines are faced in the effort to collect business facts? We now have two types of business reports in the United States. One is the expression of opinions, impressions, conjectures—obtained often from many sources and fused into a common whole upon the theory that errors cancel errors and

that the final judgment of many minds is likely to be correct. The other type of business report so far as it goes, is based upon an actual ascertainment of facts. It is the latter which has been consistently sought in the federal reserve system from the beginning. With this purpose in view the following distinct lines of effort have been pursued:

1. To follow, analyze, and explain all acts of legislation having a direct bearing upon the credit, banking, and business situation.

2. To obtain from as many sources as practicable actual current monthly statistics of the volume of representative commodities produced and placed upon the market.

3. To obtain in the same way accurate statements of the movement of commodities from points of storage or production to places of marketing.

4. To obtain in the same way accurate figures representing the rapidity and extent of the use of the credit mechanism of the country.

5. To obtain in the same way reliable data concerning prices and rates of exchange.

6. To obtain, analyze, and explain reliable and inclusive data showing the movement of our foreign trade not only in the aggregate but also in relation to the individual countries.

7. To obtain in the same way accurate and trustworthy reports concerning rates of discount and interest.

8. Generally, to secure from foreign sources data parallel to those domestically obtained, and when this is not possible then to obtain reliable information of a more general sort representing the views of local observers concerning conditions prevalent in these foreign countries.

Future labors should no doubt be directed along the same lines. The objects must in general be these:

1. To eliminate practically all expressions of opinion concerning existing conditions and to base the reports entirely upon facts, stating them upon a statistical basis wherever possible.

2. In order to secure the foregoing results as fully as possible, to develop in each particular line of industry or trade satisfactory statistical connections which will result in supplying monthly the basic data upon which to rest the reporting service.

3. To extend, improve, diversify and render more accurate the existing statistics of production, goods movements, exchange, distribution, and consumption.

4. To develop new and better criteria or indices of business and credit.

The problem, although stated in simple terms, is not an easy one. On the contrary, experience has shown that the difficulty is greater than at first supposed. The difficulties in the present situation may be enumerated as follows:

1. Gaining the confidence of business men sufficiently to induce them to part with their information.

2. Devising simple yet adequate reporting forms which will adapt themselves to good accounting requirements of business yet will not require so much time as to make it an unduly onerous task to send them in.

3. Establishing sound and satisfactory connections, which will be of material advantage, between the reserve banking system and the principal trade associations in the country, resulting in the mutual interchange of information.

4. Drawing careful lines of delimitation between the work of the several reserve banks as compared with one another on the one hand, and the work of the entire body of banks and that of the Federal Reserve Board on the other hand, so that there will be no duplication, overlapping or confusion, or at least that these undesirable elements will be as limited as possible.

5. Securing a reasonable uniformity in methods of interpretation and thought upon common problems.

IX

While it has been possible only to give in very brief outline a survey of conditions and problems in business reporting, enough has been said to show that the subject is passing out of the experimental and into the scientific stage of its development, and to suggest a few of the possible lines along which it will be likely to advance.

In brief, it may be said that the application of statistical methods to business opens in the first place a field for scientific investigation and for the making of general decisions and the drawing of conclusions intended to verify economic theories or to modify them, or in other cases to show their erroneous character. Economics in common with other social sciences has for a long time suffered from the fact that it was lacking in opportunities for the use of the laboratory method. Business study and statistical analysis will supply this lack. It will furnish the means for "checking up" and testing conclusions which have hitherto received only a limited acceptance because of the fact that they were chiefly theoretical and could not be confirmed through references to actual fact.

On the other hand, it would seem clear that the future development of credit study and the proper adaptation of credit business would probably call for a wider and broader development of statistical analysis. Only through this means will credit conclusions be generalized and strengthened as they must be. Careful business reporting and statistical analysis is therefore to be regarded as intimately associated with scientific banking in the future.

It is probable that as time goes on the prejudice of many business men in respect to making known the statistical position of their businesses will disappear and they will welcome the assistance of the business investigator recognizing that their own prosperity is intimately dependent upon that of the community. Before this point is reached, however, there will have been a very great broadening of individual analysis. There are already many corporations which think it worth while to spend large sums upon investigation and which have developed business indexes peculiar to their own industry. This movement will go much further and it will in time adapt itself to the more general studies of the business investigator so that the work done for and by individual concerns will be chiefly a specialized application of the facts and conclusions rendered available in a general way by those who look at industry from a national standpoint. Statistical analysis or business reporting offers an increasing field of work in which the services of carefully trained and experienced investigators are called for. The subject is thus significant and important from the standpoint of theory, of practical business, and of individual employment.

THE ACCOUNTANT, THE INDUSTRIAL ENGINEER, AND THE BANKER

BY ARTHUR ANDERSEN *

DURING the last days of the Peace Conference a great international financier was watching from his hotel window in Paris the kaleidoscopic scene on the street below. Civil and military officials riding about in taxis or talking in cafés made up a goodly portion of the crowd. Suddenly the banker turned to a friend with the remark—"Jim, do you know what is the matter with the world today? Well, I'll tell you. There are too many people spending other peoples' money."

"Yes," said his friend, "that's true, but the remark comes strangely from you. All your life you've been handling other peoples' money."

"But I have done it as a public servant with a full sense of public responsibility and of the consequences to me as a banker if I failed to exercise the painstaking care necessary to insure the money being wisely invested. Furthermore, as you know, I have in effect become a silent partner in every business which I have recommended to my clients, and have insisted not only upon proper financial and operating standards, but have seen to it that my standards have been carried out in practice."

The extravagance of the early peace days is a thing of the past; but in the difficult times which have followed, the public servant function of the banker has become more and more evident and it is the purpose of this article to outline how in this work, by reason of the growing volume and complexity of American industry, he has come to naalyze more and more closely the internal conditions of the business organizations to which he advances money, and how this, in turn, has resulted in the accountant and the industrial engineer becoming with him, "silent partners" of industry, with beneficial effect not only in the stabilization of financial conditions, but in raising the standards of industrial and commercial practice, as well.

During the 65-year period between the first census of 1850 and the last complete census of 1915 there has not been a decade in which the capital invested in industry has not increased 50 per cent; and it will be noted in the following table that two decades witnessed a growth of over 100 per cent.

Back of this, of course, is a fascinating story of machine tool design, of the growth of railroads and other means of communication; but the point in which we are now interested is the new capital which has been drawn into industry.

The work of wisely protecting the investment of this constantly increasing capital has been an herculean task. A modern business of any size involves not only successful utilization of large sums of money, but the co-ordination of many professions and crafts, and the management of increasing numbers of employees within a single business unit; and with this increase in complexity the determination of what was sound and what unsound has become exceedingly difficult.

Consider the problem of organiza-

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Year and Basis	Capital	% Increase over Last Census
1850—All	$533,245,351	....
1860— "	1,009,855,715	89.4
1870— "	1,694,567,015	67.8
1880— "	2,790,272,606	64.7
1890— "	6,525,050,759	133.8
1900— "	9,813,834,390	50.4
1900—Factories only	8,975,256,496	....
1910— " "	18,428,269,706	105.3
1915— " "	22,790,979,937	23.7
Per cent 1915 Over 1905		79.8

tion for a moment. A glossary of occupations of the logging operations of a large modern lumber company includes over 300 distinct operations or trades which must be welded into a working unit. Moreover, these occupations must be organized in a small way as well as in a large way. That is to say, the balance of men in each of the several stages of a series of operations must be carefully worked out.

Assume a crew of the following for felling, bucking, swamping, sniping, and rossing:

4 fellers	1 knotter
5 buckers	1 swamper
1 sniper or rosser	

A well-balanced skidding and yarding crew, to keep up with the output of the above, would consist of the following:

1 side boss	1 chaser
1 hook tender	1 signal man
2 choker men	1 spool tender
1 rigging slinger	1 engineer
1 watchman	1 fireman
1 landing man	1 wood buck
1 block maker	

In case the distance to be skidded necessitates a roader there would be added to this crew another engineer, fireman, and wood buck, with possibly another chaser and signal man. Road conditions might necessitate one or more water bucks, a pump man, a water slinger, and a block man.

When it is realized that logging is merely one department of a great integrated industry which includes transportation, milling, and manufacturing units, as well, the intricate character of the organization problems of even such a comparatively simple type of industry becomes clear, and what is true of the organization of men is true in increased measure of the organization of machinery, tools, and materials.

Furthermore, as the operating nature of the business has become complex, so have the merchandising and financing. Markets have been expanded, variety and scope of territory have increased, distributing machinery has become intricate, and the length of time elapsing between manufacture and sale has been greatly extended.

The increasing size and complexity of operating and merchandising have of course involved an increase in volume and complexity of financing, and this in turn has meant an expansion in volume and detail of the accounting records, just as the increase in the sales and operating complexity has meant more numerous and more involved records and controlling devices.

With this in mind it is obvious that passing upon the conditions and needs

of the modern business organization is a vastly different matter from what it was 50 or even 25 years ago. As long as the banker was dealing with small and relatively simple industrial units he could handle their financial problems in a personal way. The moral risk was the important factor. The manager of the small industry could be safely presumed to know the intimate details of his own business, and his statement, with respect to the condition of that business, could be readily checked. Today business units are so large and so intricate that first-hand detailed information of conditions cannot be presumed; nor can such information as is available be readily substantiated.

As a result, even in *normal* times, when business was running on a fairly even keel, the conservative banker was gradually led to safeguard his own position by making a more impersonal and extended examination of the condition and true needs of the businesses he was asked to finance.

The accountant was called in as an adviser very early, and the rapid development of accounting as a profession has been greatly stimulated by this need for accurate and impersonal knowledge of the status of large and intricate business units.

The banker in substance said to the investigating accountant: I want you to make an unbiased examination of the condition of this company; I want you to first verify the accuracy of the company's books and to bring them into line with good accounting standards; I want you to extend your investigation back for a sufficient number of years to secure a working basis for judging the *trend* of earnings, the past financial policy of the management, their policy in conserving their properties and in providing for lean years; I want to know the *trend* of their inventories, their working capital requirements, and the ratios during the years under review of current liabilities to current assets and other similar significant ratios. In short, I shall hold you responsible for giving me an accurate and practical analysis of the past and present financial condition of this company on the basis of which I can decide upon whether to stand responsible for recommending this as a safe investment.

The analysis which the accountant was at first asked to make was, of course, relatively simple—a certified balance sheet, and later a statement of income and profits—the main function of the accountant at this time being the verification of the accuracy of the books. The idea of establishing the *trend* of the business developed later, until today the range of the refinancing report made by the accountant is very broad as will be indicated by the following outline of a typical report:

I. History and Organization

1. Incorporation date, charter terms, and outline of original and subsequent issues of securities.
2. Changes in ownership, management, lines of product manufactured.
3. Name, position, salaries, age, length of service, and stock-holdings of principal officers and executives.
4. Trend of sales.
5. Manner in which present net worth has been built up.
6. Financial position of the company at various stages of its growth during the period under review.

II. Working Capital Requirements

III. Results from Operations

1. Net sales, cost of sales, gross profits, comparison of gross profits to net sales for each year under review.
2. Comparison of total profits and income to net sales by years.
3. Comparison of selling and general expenses to net sales by years.
4. Comparison of Net Profits to net sales before and after deducting taxes, by years.

5. Comparison of interest charges to net sales by years.
6. Comparison of surplus net profits to net sales by years.
7. Analysis of cost of sales by years.
8. Analysis of general selling expense by years.
9. Further miscellaneous analyses, as, for example, ratio of material costs and productive labor costs to factory overhead and prime cost, explanation of variations in profits as between the different years of the period under review.

IV. Detailed Analysis of Each Item Shown in the Balance Sheet

1. Inventories
2. Notes and Accounts Receivable
3. Cash in Bank and On Hand
4. Deferred Charges
5. Subsidiary Company Stock
6. Land, Building, Machinery, Plant, Equipment, etc.
7. Current Liabilities
8. Bonds, etc.
9. Funded Debt
10. Capital Stock and Surplus

V. Summary of Insurance in Force.

Reliable and impersonal information of this character obtained through independent sources gave the banker exact knowledge not only of the present position of the company, but of the policies and methods instrumental in bringing it to this position. Granting that a fairly typical period has been covered by the report, it gave him a further indication of what the management was likely to do in future similar periods.

From this point it was an easy step for him to call in the industrial engineer and say to him:

It is all very well for me to know what the company has done, but I am practically becoming a partner in this business for the life of this advance of money and I am asking my investors likewise to become partners. I want, therefore, to know what the elements of strength and weakness are in this company, so that I may gain a notion of how it may be expected to operate for the period of this loan. I am not asking for a prophecy but for careful and scientific judgment, based on detailed analyses, of the soundness of the operating organization upon which this management depends for promptly carrying out its orders; suitability of its buildings and machinery for the manufacture of this particular article and the ease with which these buildings and this machinery can be converted to other lines of manufacture in the event of serious curtailment in the sales of the product now being made. I also want to know how stable the market for this product is apt to be, based on its present market distribution, and the stability of its relations with its principal customers. Furthermore, I want you to find out how promptly the management will receive information with respect to changing conditions of sales, financial position and operating methods, and to what extent this information can be depended upon for accuracy. This means that you must find out the adequacy of its systems for controlling sales, production, costs, and finances. Finally, in doing this, I want you to work in close coöperation with the accountants. Your work is supplementary to each other. Together it gives me a complete picture of the strength and soundness of this company.

As a result, the refinancing report has gradually grown to include:

VI. Comments on Commercial Relations

1. Favorable or unfavorable character of purchases and unshipped sales orders.
2. Sales methods and policies
   (a) Sales organization and system for controlling sales.
   (b) Trade channels.
   (c) Advertising methods and policies.
3. The market position of the company
   (a) National position.
   (b) Geographical distribution.
   (c) Continuity of sales relations with principal customers.
   (d) Potential market.

VII. Comments on Industrial Status
1. Organization plan and personnel.
2. Systems for controlling materials, labor, production, equipment, costs, and accounting.
3. Strength or weakness in present location in respect to raw materials, market and labor supply.
4. Physical conditions
   (a) Buildings.
   (b) Layout of equipment, etc.

It must not be understood that the banker is demanding perfection in these matters. The standards in different industries vary greatly and requirements must be based on practical knowledge of these conditions. He is, however, saying to the management of the company to whom he is advancing funds: "With certain exceptions, your business measures up to what I have set as a satisfactory standard for a plant of this type. There are certain important weaknesses, however, which you must guarantee to correct and we will advance these funds subject to your definite agreement to make these corrections. Furthermore, I feel entitled to know at stated periods just what your financial and operating condition is and what progress is being made toward meeting our criticisms."

In this way, the banker is actually entering into a semiexecutive relationship with his clients for their mutual benefit and satisfaction. It is not difficult to understand that, with the broad experience of the successful banker in many industries, this insistence upon safe and practical standards is having an important and wholesome effect upon the general level of business methods and policies in use in our industries. The manufacturer is given the benefit of a broader experience than his own; the investor is being protected as never before, and industry is being developed along rational lines by placing capital only where it will do the most good. In this sense, the banker is tending more and more to become a public servant, a director and co-ordinator of the financial, industrial, and commercial resources of the country.

ORGANIZATION FOR CONSTRUCTION WORK

BY RALPH U. FITTING*

WORK which has to be undertaken for the construction of a definite project has to be organized somewhat differently with its personnel than a purely manufacturing undertaking wherein the same class of work is repeated daily or periodically. The principal reason for this is that construction programs call for completion of the inherent parts upon a definite schedule in order that the whole may conform in time of completion and without interference between various parts of the forces.

A construction force has been likened by some to that of an army in military discipline wherein certain project works have to be made. This analogy is not quite accurate in that the commanding officer in the army, in contrast to a manager of construction, does not have the opportunity of picking his entire personnel from men qualified by experience and temperamentally inclined to the kind of work proposed. Also the commanding officer has not the power of discharging and hiring to suit particular needs. In the selection for construction work of particular men chosen by reason of experience and qualifications, there is need for considerable latitude in picking and choosing. Of course for those in charge of responsible parts there should not be the necessity for frequent change in order to obtain the right man, as this leads to obvious difficulty. The right man should be chosen at first.

A construction organization from the viewpoint of the executives falls under two general classes of function and control. By function is meant the ability to carry out and perform the particular work in hand. By control is meant the relegating of responsibility in such a way that the executives are always in touch with every feature of the work as it progresses.

Under the heading of "function" there are several things which appear with relation to the work to be done of which the method of financing is sometimes a guide, especially in so far as affecting that part of the organization which has to do with the handling of the finances. This is affected by the form of contract, whether it is (a) Lump Sum, (b) Cost Plus, or (c) Force account.

In the first case the contractor takes the entire responsibility that the total cost shall not exceed his estimates. This leads to the introduction of substitutes and cheaper methods in order to reduce costs, and an extreme care on the part of the organization, which factors are not present under the other two forms. Furthermore, a close watch is kept for such items as are extra to the work and upon which additional compensation can be claimed.

In the second and third cases, the owner takes the responsibility for the ultimate cost, and the temptation to use substitutes and cheaper methods is not present in the same degree as in the first case, the selection of these things being left to the discretion of the owner. The attitude of the executive part of the organization is therefore somewhat different, because in effect he becomes the agent of the owner and

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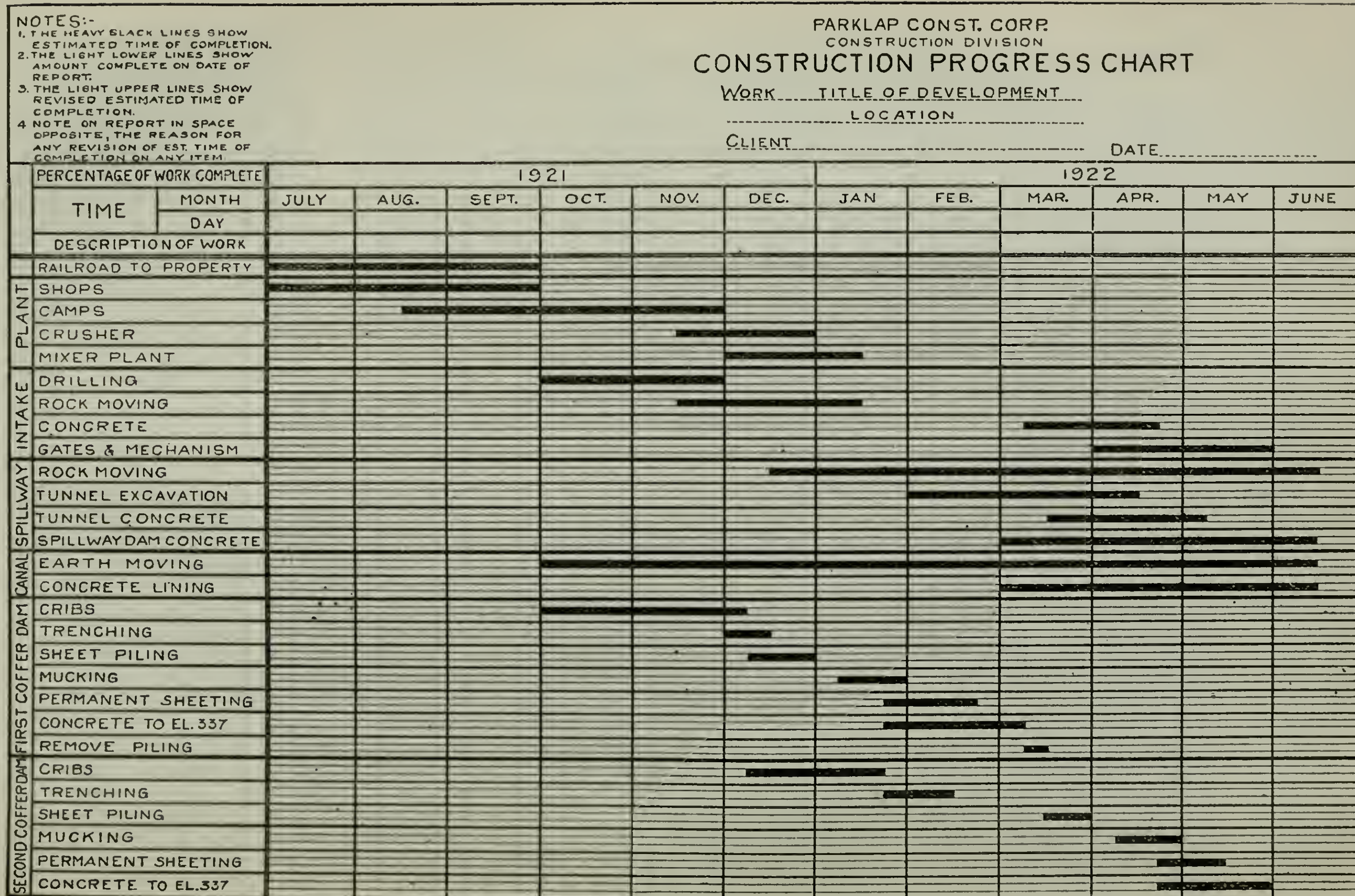

Light upper and lower lines are brought in on date report is filled out

FIGURE 1. PROGRESS REPORT

is laboring to keep the owner satisfied with the progress and quality of work rather than, as in the first case, endeavoring to eliminate the possibility of losing the estimated profits.

Sometimes contractural requirements also have a material bearing on the structure of the organization because of particular terms introduced which are aside from the usual run of ordinary construction business. These may be of many kinds, such as construction without interference to an operating force, construction with forces of other contractors, etc. Contractural requirements have so many possible phases and elements that specific cases cannot be cited, but it can be seen that the introduction of such special matters into a contract will have a material bearing on the structure of the organization forces. For example, there may be a time limit or the contract may require a bonus or forfeiture at the expiration of such time limit. There may be a division of the overhead expenses or the joint use of funds, etc.

One of the most important parts of organization is in the matter of labor, as all construction work is made up in a very large percentage of this item. Of course location with respect to labor supply, transportation, living conditions, wages, health conditions, climate, etc., has a bearing on the procurement of satisfactory labor. Work which is of comparatively short duration, requiring an abundance of labor and which is bad in the above-mentioned respects, practically means that poor labor will be the result. By poor labor is meant inefficient labor, with an excessive turnover to keep the work going. Very often it is necessary to maintain at the points of supply for labor in large cities a department for securing and transporting the labor to large construction work. In these days and times the living facilities for labor must be more attractive than in the past, and contractors who have the welfare of their laborers at heart are careful in the matter of health conditions and general living facilities.

The equipment required to carry on the construction work is also related to the matter of function in that inadequate equipment delays performance and increases the time required and the amount of manual labor. The necessity for the elimination of these features is more and more demonstrated by the ingenious devices and apparatus which are now available to reduce manual labor and to increase the speed of progress.

The Pyramids of the Cheops were built with 100,000 men and during a continuous period of from 15 to 20 years. There was extreme hardship, loss of life, and absolute disregard for human effort. Under modern methods such pyramids could be built in one-half the time and with one-half of the number of men then required. This would be accomplished by the use of what the contractor calls "plant," which involves mechanical equipment of all kinds in order to save labor. It is in this that the real skill and thought bring the best results. It does not necessarily mean that the project which has the most expensive and elaborate plant will be the best built or delivered in the least time. The whole success of the engineering world today, whether in building tremendous projects like the Panama Canal, the Catskill Aqueduct, or subacquaeous tunnels, etc., is because of the method of attack through the plant which is chosen. No definite rules can be laid down; the choice of plant depends on the experience of the executives and the facilities. The important features are location, the kind of water-power available, and the length of time re-

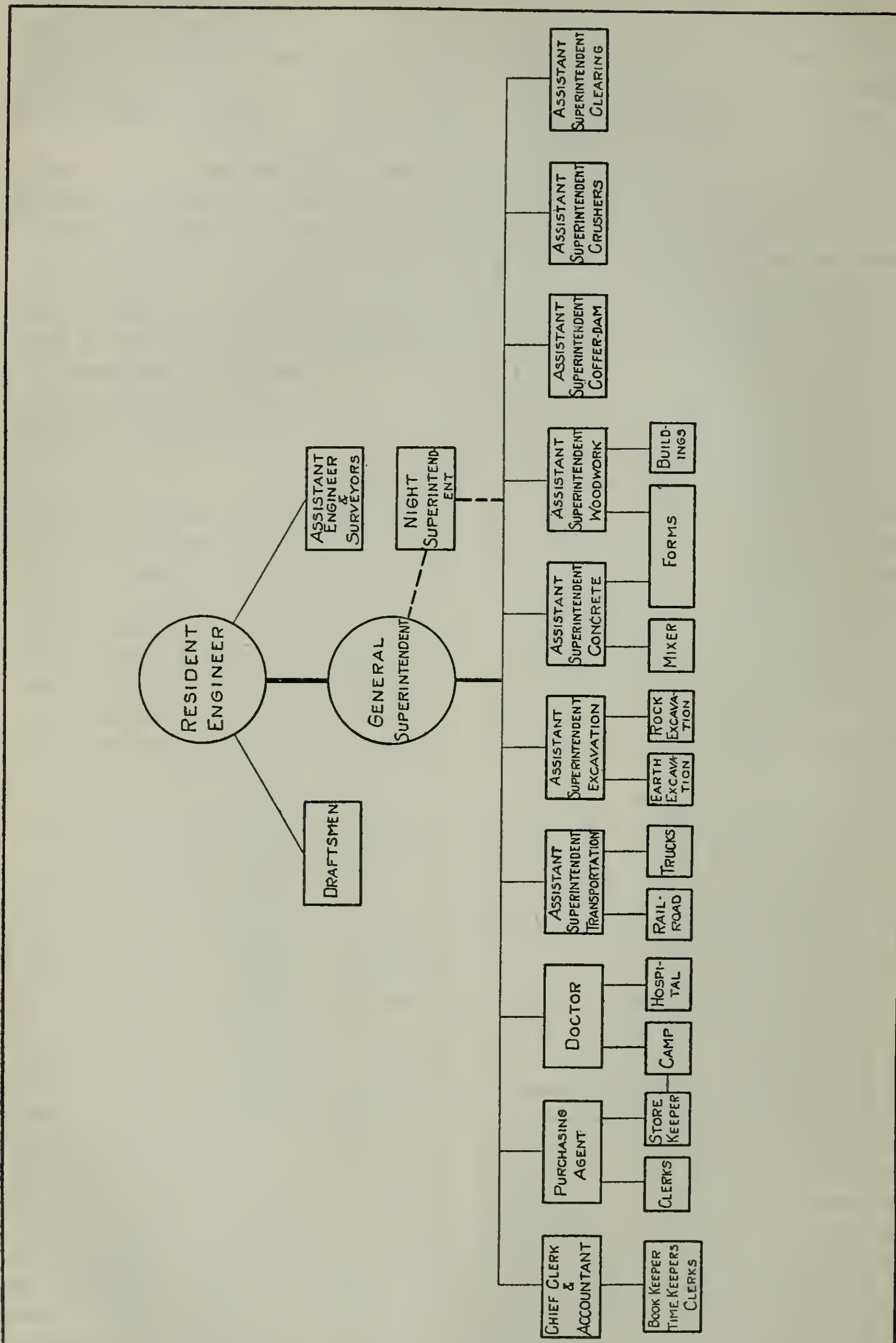

Figure 2. Organization Chart

quired to complete. A piece of work requiring a few months to complete would be handled very differently from one which would require several years to finish, although the kind of work would be the same in each case.

The function of the organization is also materially affected in the prosecution of construction by the weather conditions, and the layout of the progress of the work by the expected seasonal weather at the location. For example, construction work on a river having definite periods of flow, both as to flood and as to minimum discharge, can be so co-ordinated that there is no interruption.

The co-ordination, also, of the different departments of men, should provide that there is no interference between gangs but that teamwork presides in order to obtain the best results in the shortest time.

The question of time is always paramount and is usually one of the specific items of a contract, because today all things are measured in money, and as the construction period is non-productive and the interest on money employed continues without stop, the time in the modern sense is quite different than in the days of the Cheops.

The other feature, that of control of an organization in which the executive is constantly at work, provides for a necessity which although somewhat parallel to the function of the organization has to do more with the methods of keeping in touch. One of the principal items in this respect is that of the purchasing of materials and supplies wherein come the matters of best buying, keeping in mind the necessities of the work with respect to the different elements, and the delivery of these materials after purchase. The facilities for storing and for ready access to the work need close attention, and qualifications on the part of the personnel which call for special treatment.

This leads to methods of keeping records and accounts, the system of bookkeeping and cost accounting and the analysis of periodic costs to determine the trend of costs of the different parts so that there is not an overbalancing of effort in the non-essentials. The control also has to do with the operation of the plant and its maintenance for continuity of operation, in order not to delay or upset the schedule to the keeping of which the entire organization is bending its best efforts. This means that adequate repair facilities must be ready always and weak spots watched for and strengthened before failure. Also since mechanical power plays such a large part there must be no interruption in the source of power, whether it is steam-power produced from fuel, or electrical power from outside sources.

The prosecution of construction, of course, is the main object, and calls for undivided attention of all departments to this end so that co-ordination of effort will complete the different members of the work to a final whole. This means that departmental responsibility must be fixed and lines of demarkation drawn so that no unobserved part can slip by without responsibility falling upon someone. This means also that the progress must be thoroughly thought out in advance and scheduled so that the completion of each of these principals will dovetail together. It means that progress reports must be made continually and studied thoroughly by those in charge so that the particular parts which are falling behind can be speeded up in order that there may be no lag. Such progress reports are of different kinds, depending upon the particular difficult features, and are not of a type which can be made uniform for all projects, as they depend so much upon the different

links which separate the raw material from its place in the finished work. This may be transportation or it may be labor. Progress charts to be of value must take into consideration all of these elements and above all must indicate to those in charge that control of the organization and the speed has not been dropped in any important item.

A sample progress chart is appended (Fig. 1) covering a supposititious case showing the relation between the actual progress and the estimated program as laid out, upon which the organization was put together. There is also appended an organization chart (Figure 2) showing how the various departmental responsibilities link back through heads to the chief executive.

The organization of the construction forces is not new, but modern times offer the opportunity of using mechanical equipment; and the necessity for conserving time and money has placed new responsibilities upon organizers of this kind of work. Oftentimes untried things are attempted, sometimes with success, sometimes with failure, but these are chances which some of the contractors are willing to take because of the resulting profits that may accrue. There may be said something in favor of these things whereby new methods are established when they are successful, which are revolutionary on future work, as for example, the building of the Detroit River tunnels through the use of submerging caisson sections into place. The contractor took a gamble and won, and today under similar conditions this is the method used.

In general, contractors are conservative in their organizations, depending upon tried methods rather than untried, and they lean on the side of safety where there is a doubt. The strength of materials is a matter which is always approached with caution whether it is lumber, soil, or human ability, and after all, the most uncertain and the one causing the most concern is the last.

USE OF HOUSE ORGANS IN HANDLING SALES

BY ROBERT E. RAMSAY*

TO the uninitiated, the house organ is a kind of musical instrument; to the initiated it is frequently a "wind" instrument in that it is forever "blowing" the merits of the advertiser's products, or running large half-tone plates of I. M. Itt, president of the house which publishes the "organ" or "magazine" as some call it.

The trade paper publisher often sees it as a foe to his publication, which it distinctly is not if properly controlled and edited, while the general publisher looks askance at the advertiser who frequently publishes a house organ, even though the publisher issues one of these sales builders in his own business.

A prominent advertising man at one of the international conventions was responsible for this pessimistic statement in regard to house organs:

> The first issue is almost sure to contain pictures of the factory, presentments of its president, and a history of how grandfather, after walking forty miles with all his assets tied up in a bandanna handkerchief, started the factory which has grown to its present commanding place in the business world.

Yet there is a dynamic timely sales implement in this piece of advertising which for the want of a better name someone christened a "house organ."

A satisfactory definition of a house organ may be: "Any periodical publication issued by a person, firm, organization, or corporation for distribution among any particular class of people, either for promoting good-will, increasing sales, inducing better efforts, or developing greater returns on any form of investment."

The house organ is not a foe to the trade paper because the trade paper represents a trade or industry, while a house organ represents the house which publishes it.

The use and control of this form of sales promotion will be the object of this analysis, and as we proceed we shall try to bring out these three points from the standpoint of the executive:

1. The control of the house organ.
2. Control through the house organ.
3. Control of salesmen, to take up a specific class, through the house organ.

Whether published daily, weekly, bi-weekly, monthly, bi-monthly, or quarterly; whether in the form of a blotter, envelope enclosure, booklet, newspaper, magazine, or some novel format; whether aimed editorially at (1) salesmen or agents; (2) dealers or other distributors; (3) employees of office or factory or both; or (4) at consumers, users, or possible customers; the house organ is a ready instrument for the control by executives of the house policies.

The house organ (also termed house magazine, corporation magazine, sales bulletin, and many similar names) is the logical outgrowth of modern business, especially of big business. A brief analysis of how it has grown up with business will likewise show how executives may take advantage of this timely form of advertising and sales promotion.

In the olden days the head of the business met the customers personally,

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whether the business under discussion was one of a manufacturer, retailer, or wholesaler. The prospective customers, salesmen, agents, all the employees, and the distributors knew "the old man" personally.

Even those who did not chance to come to the factory received handwritten communications from the man whose lengthened shadow, as Emerson well puts it, made the business. The closefisted man was stingy with his quill and ink, his chirography and character were clear to the observant reader.

As business grew up employees lost that personal contact. Executives behind glass doors and mahogany partitions took the place of "the old man" as he was endearingly called.

Not having reached their place through personal contact these executives sought a means of controlling the various human elements of their business, and that means is the house organ. Their problem was that of the freedmen of Athens centuries ago, who bewailed the time when all the men of Athens could not meet together and discuss problems; but unlike the Athenians the far-seeing executive started a house organ—a reproduction on paper, of the house.

II

The earlier house organs of American industry were in many instances far superior to those of today, and for this very simple reason, that in the early days the executive head of the business prepared the material for the house organ. Benjamin Franklin did not entrust the preparing of copy for *Poor Richard's Almanac* to some embryonic copy-writer in the Franklin print shop. Had he done so that house organ which was a business-builder for his print shop would not be considered as a classic of American literature.

Coming down to more modern times, *The Gimlet* of the Norvell-Shapleigh Hardware Company, edited by "Mike Kinney, Teamster and more recently *The Houghton Line*, published by E. F. Houghton and Company, of Philadelphia, made a deep impression upon the mind of American business because they were edited by Sanders Norvell, and Charles E. Carpenter, respectively. Both men were general managers and the chief directing executives of their respective companies.

The house organ, then, which is fortunate enough to bear the stamp of the personality that controls the business, is more likely to meet with fortune in its task of projecting the personality of the house beyond the walls of the office to the multitude of customers whom the heads of the business cannot meet in person.

Unfortunately, many publications have not this authenticity of tone. They are edited without close contact with the directing head of the business which stood sponsor for the publication, and the result is a spinelessness which contributes to their early decay.

Another prominent cause contributing to the failure of many house organs is the lack of preliminary analysis into matters of cost and potential circulation. For instance, a certain large national advertiser not many years ago took up the cudgels on behalf of a certain merchandising policy. This house sold through practically every retail store in the country. It should have been easy to forecast the number of copies of their publication that would be required to carry their message to all their customers, but such a forcast was not made. The result was that circulation swelled enormously, and after four years this firm found the cost of publishing the house organ prohibitive, and discontinued it. The cost continuance of the publication hurt

the cause for which they were doing battle because the merchants of the country received the impression that they had started a fight they could not finish.

Similarly, another very large advertiser started a publication to be furnished to the distributors of the company's products. For this, the distributors themselves were to pay part of the cost. The new publication contained excellent merchandising advice, and distributors took to it eagerly so that circulation rose rapidly upward.

No preliminary estimates of cost had been made, and consequently no attempt to hold the expense on individual copies down to a scale that would have made its continuance possible. As a matter of fact, it perished through too much success, for the executive heads, finding the expense running out of sight, stepped in and stopped publication.

III

Almost immediately following the failure of this publication, it was the writer's good fortune to bring into being another house organ modeled on almost exactly the same plan. Prior to publication, the executives of the firm discovered by analysis almost the precise number of copies which they might be called upon to issue in order satisfactorily to reach their clientele.

In the former case, the advertising department got an "idea" and went ahead with it; in the last case, executive analysis and control succeeded where lack of them had failed.

Naturally there are few businesses, especially the larger ones, where the active general manager will have time to devote to the preparation of house organ plans, policies and copy, though it would oftentimes pay the executive to delegate the handling of production, accounting, and sales control problems, and to supervise personally the handling of the house organ.

The house organ is a means of controlling every factor which goes to make up business, from purchasing to selling; from financing to production; from employee to customer. There are, of course, other ways of accomplishing these same ends, but the house organ is peculiarly adapted to this control.

If you wish to keep your factory workers contented, the house organ if properly edited, can help to do the job. If you wish to stimulate your salesmen to go after business when apparently there is no business to be had—as is frequently the case today—the house organ, speaking with the authority of the management, can furnish aid and counsel to your fighting force. If, to insure the successful use of your product, a long and careful system of educational training must be undertaken —as in the case of certain office machines—the house organ can serve as a medium for that education. If, as the directing head of an organization, you wish co-operation from your associates and subordinates, the house organ can help to infuse the proper esprit de corps into your group.

In order to insure effective and continuous control of policies through the house organ, those policies should be reduced to writing and set up as a guide for editorial conduct.

This necessity exists in any department of business so that no business without a policy reduced to writing can set up a just claim for being well managed. Men are sick, are injured, leave for other jobs, or are called to their eternal reward; still the business must go on. Unless the house policy is definitely known and definitely understood, there is certain to be trouble ahead for the new executives.

The danger exists in a peculiar

measure for the house organ because in the stress of gathering material for each successive issue, there is a severe temptation to select the most easily available subject matter and not to hew to the line marked out by the controlling executive.

But in order to accomplish any of these desired things, the house organ must really be and speak for the house. It must not be the fervid word orgy of an advertising man speaking out of the fullness of his imagination. Every word between its covers must ring true; it must be the real thought of the executives of the business, and in step with the policy of the house.

IV

No house organ can long be edited effectively where the policy is not reduced to writing.

The policy of the house and the policy of the house organ must coincide perfectly.

There is no mystery about the house organ, nor does it require great genius to make an effective house organ.

All that is required is a definite fixed policy for the house and a written-on-paper policy for the house organ. These both come from the executive and not from the editor, though the editor may help in showing how the policy of the house is to be carried into execution.

Let us be specific: Suppose a great department store has just enunciated its policy "the customer is always right." That is a house policy, determined by the executives. The firm, we will presume, is publishing a house organ for customers at the time this new policy goes into effect. The editor would be called in and told the new policy and asked to reduce to writing the method by which he proposed to carry this policy into execution in the house organ. There are several different ways by which it might be done. It is the editor's function to consider all these methods and then suggest to the executive head of the business the one best method. The editor may be called upon by the executive to show why he deems the method suggested the one best method.

The editor must be able to know what is the best method of getting that policy to the customers. In a big business the executive would hardly find time to keep in close touch with the customers of the store and to be able to visualize clearly the methods of impressing a policy upon them. Thus the editor comes into his own.

The province of the editor in fact, is similar to that of the engineer, the inventor, or the production man. If the executive desires a machine invented which will do certain work, he puts the problem up to the inventions department, who work it out and submit the finished problem to the executive for approval. The completed machine may prove too expensive to build, or to maintain, in which event the executive turns the proposition back to the inventors and says: "Try again."

This does not mean that the executive is an inventor himself, or an engineer, or a production man.

He is an executive because he utilizes the best brain and brawn of others.

The editor of a house organ is the executive's specialist in handling "personality on paper." Just as the executive must control the product of the mill, the accounting department, or any other department of the business, so must he control the product of the man who deals with "personality on paper"—the house organ editor.

We come now to the control of the house organ and how it is made possible. In the first place the executive con-

trols the choosing of the editor. An editor should be chosen with care and forethought, because he is in effect the personal representative of the head of the house. An ideal editor, as I have said elsewhere, must combine in some degree these qualities:

1. Author
2. Feature writer
3. Advertising man
4. Investigator
5. Salesman
6. Preacher—without seeming to preach
7. Teacher—without seeming to teach
8. Reporter
9. Proof-reader
10. Planner

Having chosen a man of these abilities it is necessary for the executive to set forth the policy of the house organ; that is, to reduce to writing what is to be the purpose and policy of the publication, and then to see that the editor carries through those ideas.

The late Edwin A. Walton, who at the time of his death was advertising manager of the Burroughs Adding Machine Company, was one of the best modern house organ editors. On this problem of control through choice of the proper editor he said:

> Secure an editor of ability and sound judgment, give him considerable time and a lot of help in absorbing company policy, and then let him be *de facto* editor. If he makes a few mistakes forgive him freely, so long as he learns by them and does not repeat the same mistakes. Only by this plan can you get and hold that intangible but very real and very essential something known as "pep." Then, if after a fair trial, you find you have selected the wrong man—get a better one.

If executives would control their publications in this manner and by going over with the editor the following very vital points *before* starting a house organ, there would be fewer "suspended publication" reports:

1. Analysis of policy.
2. Purpose.
    - (a) Sales.
    - (b) Good-will.
    - (c) Educational.
3. The editor.
4. The name; for a freak or unusual name may not wear well and may lead to discontinuance.
5. The subtitle, which makes clear the plan and purpose of the publication.
6. Size, an analysis of field to be reached, competition, convenience, etc.
7. Frequency of issue, a very important point and one which should be lived up to religiously.
8. Cover design.
    - (a) Permanent.
    - (b) Changed each issue, and whether they are to be relevant or irrelevant, both of which classes may be divided into—
        - (1) Product.
        - (2) Pictorial.
        - (3) Pertinent.
        - (4) Seasonable.
9. Style of appeal.
    - (a) Language.
    - (b) Personality.
    - (c) Atmosphere.

    The Language may be either—
    - (a) Strictly business.
    - (b) Service.
    - (c) Non-business.
    - (d) Humorous.

If all these points of control have been carefully worked out in conference between the executive and the editor, there will be no doubt that the house organ will actually represent the executive and the house.

The details as to how to edit the publication after these points have been decided upon as a control policy are not pertinent here, and may be left to the editor to carry out.

There should be likewise, as has already been said, an analysis of the field to be reached, both ideal and immediate. There should be a de-

tailed budget analysis of cost per copy, per thousand copies, and estimates on other such bases as will enable the executive clearly to forecast what is going to be the cost of the house organ per issue, per year and for a term of years, considering both its original circulation and any idealized circulation to which it may grow.

It would be practically out of the question, for example, to consider starting a house organ to go to *users* of chewing gum. The unit of sale is too small and the possible circulation too large. A house organ can be and has been used advantagiously to reach *distributors* of chewing gum.

The executive should estimate his possible circulation and figure what would be the cost of reaching it all, even though he expects to start with a very limited circulation.

Figures on the cost must always be taken in connection with probable or possible results. The house organ is not an exceptionally good inquiry getter. Its province is to build good-will slowly and surely, as a rule, regardless of the field reached. There is little chance, therefore, to check results in terms of actual sales. It is much better to consider the house organ as a high-grade—an expensive, if you please—missionary representative, and to decide whether its educational value is sufficient.

V

In times like these, when markets are shifting and changing, there is vital need of keeping in direct touch with the men out on the firing line. In order to show the actual application of the principles of control set forth in the preceding sections, let us take up the control of the salesman's house organ, and through it the control of the salesmen themselves.

The salesman's publication can occasionally be judged on the basis of direct results on sales, especially when it is used as a carrier of sales contest news and propaganda.

A simple instance will show how it works. Suppose that annual sales through salesmen are $1,000,000. Assuming for the moment that a house organ would raise the effectiveness of the force only 1 per cent, the executives would be justified in investing practically even the full sum of $10,000 in the house organ, because that increase in volume would mean a decrease in overhead and increased profits on the original amount and the increased sum.

It would have to be a very poor house organ which could not increase the effectiveness of a sales force as much as 1 per cent.

One of the large truck companies has just proved this point. Their January business ran about $1,000,000. Their average monthly business before the depression ran well over $6,000,000 and their high-water mark was about $7,000,000. By instituting a sales contest and offering several worthwhile prizes they raised their volume for February last to $7,500,000 in round figures. This was done through the house organ.

There is no one form of publication which is more desirable for the executive to control directly than the salesman's house organ, for the salesmen are the business getters and they act directly for the house. The executive in this instance is the one in charge of sales activities rather than the general manager or administrative head of the business.

The fault with the average salesman's house organ is that the executive or editor or both fill it full of so-called "ginger," or "pep stuff." Salesmen object to this "preaching" and "talk."

They know the house and the policy of the house, and they are quick to scent

any flowery phrases which are the product of the editor and not of the executive.

The salesmen must know that every word appearing in the publication is either the direct product of their commanding officer or that he sanctions its use.

Edited on this basis, salesmen's publications will not be as elaborate as they oftentimes are nor will there be as many issues, but each issue that is published will be the "real works" as one salesman expressed it to me.

Salesmen are controlled by instructions, verbal or written, though few modern sales managers use verbal instructions, which too often lead to embarrassment. If these instructions do not reach the men in convenient and helpful form they are often overlooked. The house organ edited by the sales manager or his assistant who actually handles the men themselves, is an ideal instrument for carrying instructions. But will modern sales managers learn that they cannot produce numerous pages of sales house organs every day or every week, fill them up with "glittering generalities," and expect the salesmen to read them!

In these hectic times the salesmen's publications can tell the salesmen facts; show them how to get business under trying circumstances; cheer them up when they fall down. The fact that its contents are public property gives it an advantage over a personal letter, for example, in that rulings which would be resented in a personal letter can be put over with ease, while laggards can be brought sharply into line by the motive power of the publicity their lack of efforts receive.

If there ever was a time when moral fiber was likely to break down in a sales organization it is now, when dealers and consumers on all sides cry "lower prices." It lies within the province of the house organ that comes from the head and heart of the sales manager to keep up the morale of his sales organization during their most trying period. The sales force became flabby during the war period, and now it must be given "setting up exercises" to get it back in condition. The house organ is, when properly edited and controlled, the manual of arms.

Here is what the salesman's house organ can do in assisting in the control of salesmen:

1. Disseminate news.
2. Instil enthusiasm and optimism.
3. Advice as to changes in line.
4. Inform as to salesmen's bonuses and contests.
5. Incite friendly rivalry.
6. Reinforce and induce stronger loyalty.
7. Give new and better selling talks, methods, etc.
8. Stimulate general industrial morale.
9. Carry standings of salesmen in contests, or regular records.
10. Inspire the men to greater efforts.
11. Advise as to changes in prices.
12. Remind as to trade customs and correct trade abuses.
13. Sell the house to the salesmen and continually re-sell it.
14. Educate salesmen as to the importance of their jobs.
15. Tell the salesmen of advertising and sales promotion activities.
16. Pass on the friendly handclasp of the house.
17. Educate the salesmen as to economics of merchandising in general.

The thin line between "hot air" and sincerity must be followed with extreme care in editing a house organ for salesmen. If it is overstepped, the effort of the editor will fail of appreciation.

THE WHY OF F.O.B. SHIPPING POINT

BY R. H. WATKINS*

WHEN goods are delivered F.O.B. destination, they move by prepaid freight, or shipper refunds freight when paid freight bill is returned to him. When prepaid freight shipments are made, prepaid freight bills are rendered at point of origin. When the goods arrive at destination the consignee receives a notice of arrival of freight, which shows the description of the goods, the weight, the route, the rate and total charges assessed, but this bill is merely a memorandum of the transaction that occurred at the point of origin and has no standing in freight claim service.

As soon as a shipment moving under a delivered price arrives at your plant in a damaged condition, it is necessary to call the representative of the carrier to make a loss or damage notation upon your freight bill. You have no original freight bill on which this information can be entered; neither can you file a claim for loss or damage until you possess the prepaid freight bill. Having received this document from the shipper, which is sometimes not easily located, the loss and damage sustained is noted thereon by the agent and the bill is attached to the other papers, and the claim for damage is filed either with the local agent or the general claim agent of the railroad which he represents.

The station arrival notice just referred to above, while unofficial, really gives the customer a chance to audit his freight bill. If the consignee discovers an overcharge on his shipment he has no recourse against the railroad until he can present the original prepaid freight bill, which we have learned is in the hands of the shipper. Since the shipper has made the receiver of freight a delivered price, he generally feels that, if any savings are to be effected through overcharges collected, he should benefit by them and not the consignee, who has agreed to accept the shipper's merchandise laid down at the depot in his city. Thus, we find that shippers are loathe to part with prepaid expense bills even though errors in freight charges are detected by the traffic department of the consignee, which overcharges would be unknown for all time to the shipper.

Another aspect of both loss and damage and overcharge claims is that of speed in settling them. While the details of each one are well known at the time they are first discovered they do not improve with age, and should be filed as rapidly as possible with the carrier involved, which practice is appreciated by the freight claim agents generally, who in this period wish to adjust these matters as promptly as possible. It will frequently be found that where prepaid freight bills are in possession of the shippers, considerable time will elapse and needless correspondence will take place before the documents are in possession of the one who has a just grievance against the carrier.

Business houses which have a voucher system installed in their accounting department will appreciate the advantage of having original papers at the point of destination rather than at the point of origin, for to possess and attach paid freight bills directly

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to the voucher which carries all the papers surrounding each transaction is the desideratum of such a system. While some firms allow the freight to move collect they refund the freight upon the presentation of the paid freight bill by the consignee. This necessitates the removal of this important paper from the consignee's file and is subject to all the other disadvantages which are mentioned in this article.

The shipper frequently has some close affiliations with one or more carriers and when he agrees to lay goods down at a distant point for a certain price it would naturally be his prerogative to decide over which route the goods would pass, in which event the consignee has no control over the routes he would like to patronize. If the goods were moving collect freight, the consignee and not the shipper could control the routing, which practice would make him a close friend of the carriers who participated in the haul, assuming that there was any volume of business at all moving between points of origin and destination.

Shippers, when quoting their customers a delivered price on the merchandise, frequently increase a price to the customer because they are not familiar with the proper way to classify their product nor the proper way to pack it for shipment so as to secure the lowest rate on a movement. If the goods move by collect freight, the consignee can advise the shipper how to classify the goods when ready for shipment and how he wishes them packed so that he may obtain the lowest legal freight rate. When a delivered price is made by the shipper it frequently happens he is not aware of the existence of a differential or short route, absorption of switching charges, a commodity rate, a through rate, mixture provisions, or exceptions to the classification, which will enable him to obtain a lower freight charge. When the buyer pays the freight his constant aim is to secure the lowest freight rate; therefore, he will endeavor if he is wise, to determine the application of any of the above to his own business.

Firms having a different arrangement for freight charges than the one F.O.B. shipping point will sometimes find the railroads have been doing them an injustice by assessing discriminatory rates. Such a firm may decide it is to its advantage to file a formal complaint against the carriers involved and at the time will feel keenly the non-possession of prepaid freight bills, which will prove their interest beyond a doubt in the transaction about to be tried. Failure to secure the freight bills may result in a customer's abandoning reparation proceedings. The shipper seeing a chance to make some easy money can conceivably start these proceedings anew, which action will violate the confidence the consignee had in him when he told him of his intentions. If freight moved collect, the consignee's interests would be protected and not jeopardized.

It frequently happens that some one in the consignee's traffic department, or organization if he has no traffic department, discovers the rates covering a movement of his merchandise are unreasonable. Sometimes it is possible for these rates to be adjusted by negotiations with the carriers, making the filing of a formal complaint unnecessary. If a readjustment is effected you will generally find suppliers who have made a delivered price wish to pocket the saving rather than remit it to their customer who actually succeeded in lowering the rate they reckoned in the delivered

price. Had the transaction between the two taken place on a collect freight basis, any savings the receiver of freight effected would be extra profit.

We think it is admitted by all traffic men that the present rate structure is crumbling, for there are many forces at work which will compel reduced rates to be put into effect. Substantial decreases in rates have been scheduled by transcontinental carriers due to the keen competition of the Panama Canal: January 1, Canadian carriers reduced their rates —July 1 next, there will be another reduction. Much traffic will be diverted from the United States to Canada for the longest possible haul on Canadian soil. The decreased tonnage on American lines will cause railroad traffic executives to meet this competition. If this view is accepted, it is dangerous practice for a purchasing department to purchase goods on the basis of a delivered price. The rates may be depressed during the life of the agreement, resulting in profits to the seller and losses to the buyer. The buyer being under contract with the seller can scarcely ask or expect to receive the benefit of such reduction in freight—for he would not expect to have been assessed for the increase if rates went up during the life of the agreement. Even though rates remain stationary there is a possibility that the war tax law will be repealed shortly; in fact, a bill has been introduced in the Senate which has this for its purpose: If this tax were repealed it would result in a saving of freight, which under a long time agreement would accrue to the shipper and not to the buyer. The railway wage decreases announced recently by the United States Railroad Labor Board should lower rates.

A delivered price is to be discouraged, particularly when it covers commodities to be shipped to the various plants or places of business of the buyer. This kind of agreement is a dangerous one for the consignee, in that the cost price of the merchandise is inflated by the freight charges to the longest haul. On each shipment that moves to a short haul delivery point, the shipper is making a profit on the consignee on the freight charges as well as on the merchandise.

There is a greater element of competition in buying when quotations are solicited on a F.O.B. shipping point basis, for the reason that the buyer can add the rock bottom freight cost to the quotation thereby obtaining the gross cost price to him. When this cost is obtained he can easily determine which is the best source of supply for him, assuming the quality of merchandise and services rendered are the same by all competitors. The F.O.B. shipping point price renders mistakes due to lack of knowledge of freight rates impossible.

To prove these statements, our firm asked a Minneapolis concern to quote us F.O.B. shipping point and F.O.B. Canadian destination. Upon comparing the quotations, it was found the Canadian quotation was 7½ per cent in excess of the current rate of duty. This amount represented the war tax on imported articles. This surcharge, however, has been repealed.

In these days of non-fluid capital it is the aim of every business to lessen the amount of capital invested therein. When shipments move on a collect basis, less capital is invested than when they move on a prepaid or delivered price basis, because the freight charges are not included in the invoice price of the goods. Since it takes time for freight to move from point of origin to point of destination, this element of capital assumes a very important aspect.

THE CONTROL OF THE ADVERTISING APPROPRIATION

BY JAMES W. YOUNG*

THERE was once a wizard of advertising salesmanship who closed his exhortations with this classic appeal: "Be a sport, and take a page."

There was a day when most advertising expenditures were made on just that basis. The theory was that of "cast your bread upon the waters, and perhaps you will be one of the lucky ones to whom it will return manifold."

Thank the Gods of Good Business, that the day of advertising "flyers" has gone, with no more traces to be found of it today than could be found of such archaic business practices as single-entry bookkeeping and buying good-will with liquor.

In most businesses today advertising has advanced to a place where we have, as the title of this article indicates, an advertising appropriation. Somehow or other, a sum is arrived at which will be expended for advertising over a given period of time. The wide extent of this practice as it may be found today represents a vast improvement in the control of advertising expenditures.

In the very term "advertising appropriation," however, there lingers an indication of an attitude toward such expenditures which shows that they have not been brought within the control of sound business principles.

Something more than alliterative attractiveness is behind that name "advertising appropriation." We never hear of a salesmen's appropriation, a manufacturing appropriation, a buying appropriation, an accounting appropriation, or an overhead appropriation. Such items as these usually have a cost terminology. And the fact that we so rarely hear mention of an advertising cost is an indication that we first need clearer thinking about the place of advertising in the business budget if we are to have better control of its expenditures.

The advertising appropriation, as the term indicates, is still too often "a sum set aside" from the other financial items of the business. It finds its way on to the profit and loss sheet, but not often enough does it appear on the operating sheet.

The result is that the advertising appropriation, instead of being calculated coldly on some sound basis, is arrived at too often as the result of an emotional contest between the sellers of advertising and the powers that hold the purse strings.

Every experienced advertising manager, advertising agent, and representative of advertising, knows, unfortunately, in how many cases the whims and prejudices, the temporary waves of optimism and other emotional considerations, determine the size of the advertising appropriation.

In brief, in most businesses where advertising is used at all it has advanced from the old flyer stage to a place of belief in advertising as a good policy.

But what has not been fully recognized is what Franklin said of the old adage, "Honesty is the Best Policy;" namely, that honesty is not a policy, but a principle.

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Where advertising once becomes recognized as a principle of modern marketing, the true basis for the control of advertising expenditures is arrived at. Advertising then takes its rightful place as one of the operating costs. It is calculated from some definite basis, is budgeted with other cost items, and its expansion or contraction controlled without sentiment in accordance with the general business program and according to the effectiveness with which advertising demonstrates its ability to serve the needs of the business.

That this view of advertising is beginning to make some headway is indicated by the amount of interest now taken in methods of arriving at a basis for calculating what advertising expenditures should be.

To conceive of the necessity for some such basis, and then to work out what that basis should be for his business—these are the first steps the executive must take if he is to bring his advertising under true control.

In the discussions that have taken place as to methods of arriving at the advertising basis, much confusion of thought has arisen through the idea that there may be some fixed rule for doing this that will apply to all businesses.

"How much should I spend for advertising?" can no more be answered by rule and precept than could the question, "How much shall I spend for a factory?"

The basis for advertising calculations must be determined for each individual business exactly as the basis for any other expenditure would be arrived at; that is, by a study of the needs, the marketing problems, the financial resources, the factory capacity, the competition, etc., of that particular business. The basis so arrived at would have to be tested by the practical experience of that business, and perhaps be revised to meet varying conditions just as other items in business are tested and revised.

There are, however, general principles for guidance in approaching the problem, and some accumulated experience from which the executive may draw help in working out his particular basis.

The first thing to get clear is the unit basis for the advertising cost. For this purpose it will usually be found desirable to select the common unit basis of sale upon which the business is conducted. In a grocery trade product, for instance, the advertising cost should be so much per case. In the textile business it might be so much per yard. In another business, so much per gross, or dozen, or hundred. Where the unit of sale is a large one, as in the case of automobiles, household appliances, or watches, the basic unit might be the article.

These particular figures would not apply to all articles in the classes named, but would depend upon the particular selling price of the articles and upon other factors to be discussed later. They are merely cited to establish clearly the basic principle of determining upon some unit of sale and establishing for that unit of sale as definite an advertising cost as there would be a manufacturing cost.

In some cases the volume of business will be made up from a line of units at varying prices, as, for instance, a line of underwear, or of shoes. The most common practice in such businesses is to establish the advertising appropriation upon the percentage of the business as a whole, as, for example, 3 per cent or 5 per cent on the preceding year's volume. This is a convenient and easy method of arriving at the advertising figure, and likely to be a satisfactory one where the line

is of a staple character built up of regular grades of merchandise, and does not include specialties. On a flat percentage basis of this kind, advertising is treated practically as overhead is treated, or, what the cost accountant terms an "over-all" item. It is figured in as part of the regular cost before pricing goods.

This "over-all" method has the disadvantage of at times fluctuating unduly with the price of raw material and labor. A shoe manufacturer, for example, may be producing exactly the same number of pairs next fall as he produced a year ago, yet, due to decreased raw material costs, his volume in dollars and cents may be considerably less. A flat 3 per cent advertising appropriation upon his volume would be automatically reduced to the point where he probably would not have a sum adequate to buy the advertising necessary for his business. Wherever, therefore, such a manufacturer is producing in a market of fluctuating values, it would seem that the advertising cost should be figured upon the same fixed unit basis that his raw material must be figured on.

Once having established the unit of sale upon which his advertising cost shall be based, the manufacturer faces the practical and difficult problem as to just how much in dollars or cents this unit cost shall be. If he has an established business on the product or line which he proposes to advertise, he begins by laying out before him the already established unit figures for the other cost items of the product. These items will be, presumably:

Manufacturing	.00
Selling	.00
Administration	.00
Profit	.00
Selling Price	0.00

Assuming that he has done no advertising, these are the items which, in some form or other, he must start with. Obviously, an advertising cost figure must be provided either by reductions in the figures for manufacturing, selling, administration or profit, or by increase in the selling price.

It is evident here how much the particular conditions of the particular business in question will determine the part to be played by each of the existing cost items, in arriving at the advertising item.

Competitive and market conditions may be such that the selling price may be justifiably increased to cover the entire advertising cost.

If the purpose of the advertising be primarily to insure the maintenance of an existing volume of business at a good margin of profit, this advertising insurance may be provided for entirely out of the profit item.

More commonly, however, the advertising will be entered into for the purpose of increasing volume, in which case there are four possible sources from one or more of which the advertising cost may be drawn. First, the increased volume should reduce manufacturing costs—particularly manufacturing overhead. This can be calculated to some extent. Second, it may reduce selling costs; but these costs often being in the form of salaries and commissions, which cannot be reduced in advance, the savings are often difficult to estimate in advance. Third, administration costs will undoubtedly be reduced with increased volume—and some estimate can be made of this. Fourth, the profits may be reduced on the unit basis for the sake of estimated gain on the dollars and cents basis.

Having studied these existing cost factors in his business, and the margin which each or all of them might allow

for advertising upon an estimated increase in volume, the manufacturer should now turn to the other side of the problem and consider how much advertising he will need to buy to accomplish the desired result, and what it will cost.

In doing this, he faces much the same kind of a question as he would in planning a new factory. In planning such a building he estimates first, certain tangible realties such as the production capacity required, the necessities in relation to raw material, power, labor, etc., and then finds out what costs will be involved in executing the desired plans. In the end he lets the contract, staking his money upon his judgment that he can bring to pass the necessary combination of forces to make the project profitable.

In the same way, he should now turn to a consideration of what his advertising shall accomplish. What is the aim of the advertising proposed? A new market is to be developed, an increased number of dealers is to be secured, or the group of consumers is to be enlarged. Some kind of a definite goal or quota or task may be determined upon.

Then, what are the conditions upon which the accomplishment of this task depends? What is the competition? What is the attitude of the trade? What are the habits and state of mind of the buying public? What is the possible volume of business?

Then, what kind of advertising is needed to accomplish the given purpose? How much of it is needed? What will it cost?

Upon all these questions guidance may be had through utilizing the experience and equipment of the modern advertising agency, just as the experience and equipment of the architect and the engineer can be brought to bear upon the factory problem.

In short, the plan for the advertising should be made, and an estimate for the cost of executing it prepared, for consideration in relation to the facts previously developed through a study of the various cost items of the product. With these two kinds of information before him, the manufacturer and his advertising agent are then in position to determine upon a sound financial basis for the advertising in relation to the rest of the business. To fix such a basis without a careful survey of the job to be undertaken and the cost of doing it is like trying to fix a manufacturing cost unit without knowing the price of raw material. On the other hand, to fix the advertising cost unit without judging its proper relation to all the other cost factors on the product, is like building a factory without knowing exactly how it is going to be operated to make money for the owner.

To the executive who will approach the control of his advertising expenditures in this way will come a new realization of profit from these expenditures.

He will reduce, if not eliminate, the possibility of either overspending or underspending.

He will let the needs and opportunities of his business, instead of competitors' activities, set the advertising pace.

He will synchronize his advertising with the other parts of his business.

He will provide a better basis for judging its results.

He will impose upon his advertising organization a more definite responsibility for securing results.

And he will give his advertising organization a greater opportunity to produce results for him, by enabling them to devote to the work of making advertising pay, the time and thought they must now devote to selling him the "advertising appropriation."

ELEMENTS OF INVENTORY CONTROL

BY CLINTON E. WOODS*

AS the basis for all methods of distribution lies in the segregation of an organization into departments, so does the basis for all methods of accounting and production control lie primarily in the segregation of assets into a classified inventory control, dividing itself between fixed assets and movable assets; movable assets being again divided into those covered by a storeskeeping system and those governed through periods of fabrication by production control methods.

A wide difference in the classification of both of these forms of assets seems to exist in the minds of accountants and engineers. To get at a real classification the writer has made a tremendous research along these lines and, as a result, has compiled an itemized classification for fixed assets and both kinds of movable assets that can be adopted as a practical standard for any plant, it being so clearly set forth that anyone can make special changes that might be required to fit any particular combination in a business without in any way departing from this standardization. It should be here mentioned that all work in connection with inventory control must be supported by a proper method of issuing orders.

Fixed assets are the investments in a plant and its equipment, as all other assets such as materials and goods kept in various kinds of "stores" are considered movable or of such a nature as to be easily liquidated. To obtain an inventory control of fixed investments, they must first be divided into a classification that will provide not only for the differences in percentage of depreciation necessary to use, but also expenses in the shape of maintenance. Therefore, some items bearing the same percentage of depreciation will be separated into different classes for this purpose. Up to the present time there has been no literature published which would give the items in detail that go into different classifications of fixed assets, and in reviewing the balance sheets of many different plants the writer has been surprised at the wide difference in practice among accountants in making not only the division into classifications but especially in allocating items to each class of assets. To cover this from a broad point of view, it has been necessary to assume a larger classification of fixed assets than is usually employed, then write up the various items that would naturally go into each classification, and then present it in two ways:

1. As a classification by controlling account numbers and names.
2. As a classification by controlling account numbers, names, and items.

In actual practice, although it is not presented here, a classification can be made up of items alphabetically arranged, giving opposite each item the controlling account number to which it should be charged. This, with the two foregoing, gives a very wide survey of everything in connection with the control of fixed assets.

It should also be understood that depreciation reserve accounts are to be set up under liabilities covering these fixed assets, as shown by the first classification, and that such depreciation

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should be handled on the basis presented at the end of this article.

In conjunction with the control of fixed assets and repairs to be charged to depreciations, the entire handling should be done through an order department by way of plant orders, this classification forming a basis for the making of all distributions of these orders to fixed assets, whether in the form of betterments or in the form of repairs, thus establishing a uniformity of procedure in making investment and repair charges.

The valuation of fixed assets should be based on the purchase price plus installation and such other legitimate charges as would actually be converted into an asset. It should also be borne in mind that in order to keep a plant register straight and have the work of the order department and insurance requirements check with it, whenever fixed assets of any kind are removed from one location to another it should be done on a plant order, so that a proper credit may be given to the old location and a proper charge made to the new one. This removal work will in many instances be on a salvage basis. The salvage value of machinery and machine equipment such as line shafting, pulleys, etc., can only be its value for new work and cannot represent the original cost of installation, etc. Further, in some instances the removal of machinery from some particular department would be the cause of putting it into second-hand stores, from which point it may be either sold or put to new use by the issuing of proper plant orders, it being charged to the new use at the price at which it was put into second-hand stores, which does not include the original installation cost, simply covering the actual usable value of the machine or equipment for future use.

In setting up accounts for any company too much care cannot be exercised in working out a proper classification of this character.

1. Because it is a means for representing the net worth of a company.
2. It establishes a means for writing off depreciations and consequently departmental charges for depreciations, which in turn become overheads.
3. It is a basis for placing insurance and making claims in event of loss.
4. It is a basis for making all debits and credits that concern betterments and repairs as an asset value, and maintenance as an expense.

This whole situation must be controlled by plant orders, that is, a series of orders for the purchase, manufacture, or erection of anything coming within this classification and for all repair work in connection with items coming under this classification, and it should be understood that repairs should only include work which increases the value of equipment, that is, actually recovers depreciation that has taken place. Minor adjustments necessary to maintain equipment in serviceable condition are not to be considered as repairs.

To cover maintenance work a special set of factory account numbers should always be employed along the following lines. For instance, City Water System should be a factory account number to which would be charged the cost of reading water meters, inspection, and making minor adjustments to such a system. Again, Steam Radiation System should be an account to cover the cost of inspection and the making of minor adjustments to such a system. This would include such work as packing valves, unions, etc. In connection with motors a standing order number would be required for inspections, oiling, cleaning brushes, adjustments, etc. Therefore, all work of this character to any and all kinds of systems should be

done under factory account numbers, or as they are often termed, "standing order numbers," and should not be charged up as repair work to be paid for out of depreciation reserves accumulated by writing off certain amounts from fixed assets for the simple reason that under the conditions outlined all betterments and repairs are capitalized into assets or resources. Such work is really productive work, consisting of labor, material, and overhead charges, and costs the same as production work does, while factory account or standing order numbers are the general or departmental expense charges.

The following classification of fixed assets by account number and name can, of course, be condensed or expanded according to the particular requirements of any business, as for instance, in some concerns accounts 600, 601, and 602, would all come under land account, and in some concerns all of the accounts covering different kinds of buildings might come under one account, the object here being to show that differentials do exist, as in "buildings," for instance, and what these differentials are, a full explanation coming under the "Classification of Fixed Investments by Account Number, Names, and Items," immediately following.

CLASSIFICATION OF FIXED ASSETS BY ACCOUNT NUMBER AND NAME

Account No.

600. Land—Factory
601. Land—Outside
602. Land Improvements—Factory
603. Land Improvements—Outside
604. Buildings—Fireproof
605. Buildings—Mill Construction
606. Buildings—Corrugated Iron and Steel
607. Buildings—Wooden
608. Buildings—Structures
609. Buildings—Houses
610. Inside Equipment
611. Outside Equipment
612. Power Equipment
613. Motors
614. Machine Tools
615. Fabricating Machinery
616. Fabricating Machinery—Special
617. Fabricating Equipment
618. Hoisting and Conveying Machinery
619. Hydraulic Machinery
620. Semidurable Tools and Instruments
621. Shop Fixtures and Fittings
622. Office Furniture and Equipment
623. Transmission Equipment
624. Belting
625. Construction Machinery
626. Transportation Equipment
627. Patents
628. Second-hand Stores

II

In the organization of a stores recording department there should be an allocation clerk. All requisitions having been used for the withdrawal of material should go to this allocation clerk. At this point the class number to which each requisition belongs is written on the requisition, thus bringing all items belonging to any particular classification together so that the clerk handling Numbers 4, or 8, or 5, or 7, classes of goods can have all the requisitions coming to his section handed to him in a properly arranged way for entering in the stores record and also for pricing.

Any method for a real control of production is dependent first, upon organizing a production division, subdivided into certain departments for the handling of all detail incident to such a control; and second, the creation of certain accounts to value inventories during periods of conversion. This is perfectly simple if at the start a general stores, parts stores, and finished stores method of keeping inventories is adopted. The following is a summa-

rized outline of procedure, described in detail in the article on "Combination Bonus and Production Control."

Everything purchased, without exception, must be charged to a stores of some kind, preferably one account to be called "General Stores." As these stores are required by the factory for use they are issued and charged to an order, usually a production order, a betterment order, repair order, or some kind of an expense account number, so that their use may be charged definitely to something, general stores being credited accordingly.

When production orders are given for pieces or parts, and it is desired to get the cost of these pieces or parts (which are not in themselves salable until they are assembled with other pieces or parts) a parts stores is set up, and production orders for some definite quantity of each piece are made, the order closed, and parts stores charged.

When it is desired to assemble a unit of any kind another production order is issued. These pieces or parts are then drawn from parts stores and charged to the order for assembling, parts stores being credited. When any particular unit has been assembled and completed, the order is closed and finished stores are charged. When sales or shipments are made, finished stores are credited and cost of sales is charged.

During the periods of conversion, all orders are grouped together and charged to a common account called "Work in Progress." As each order is completed and costs are obtained thereon, this account of work in progress is credited, and either parts or finished stores charged accordingly. In case of betterments, the class of betterments for which the order is made is charged and work in progress credited.

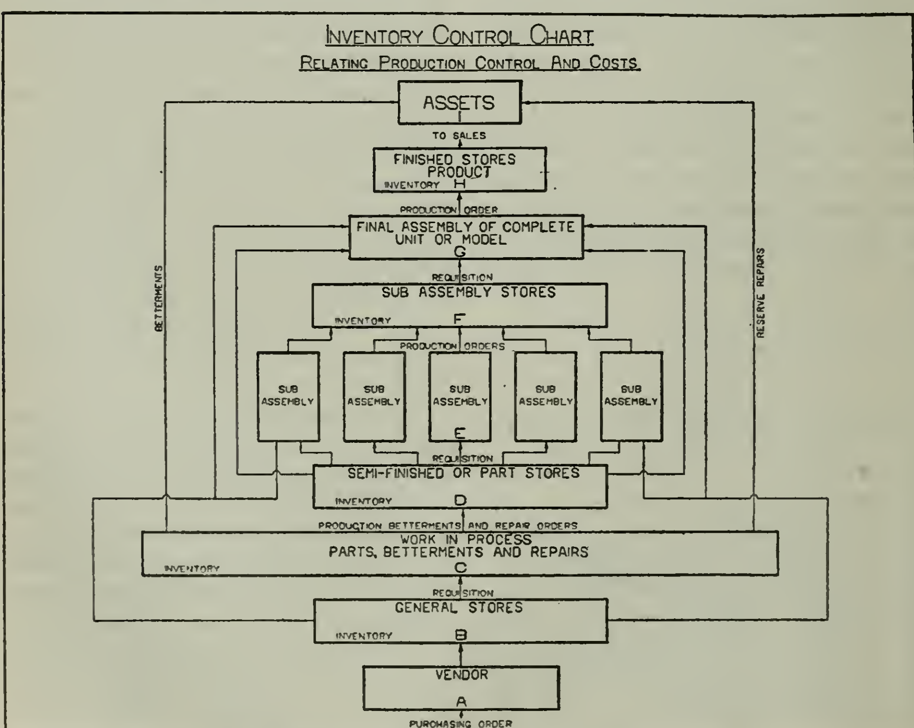

Figure 1. Inventory Control Chart

In order to again make this whole procedure perfectly clear, and to further specify just exactly how these divisions come, in connection with the control of product, Figure 1 is presented, of which the following is a description:

Point A, indicates where a purchase order is sent to obtain materials, supplies, equipment, etc. Theoretically, it makes absolutely no difference what is purchased for a company, it must pass into the inventory of General Stores, B.

From B, these stores are disbursed to C, Production Order Numbers, Betterment Order Numbers, Repair Order Numbers, or account numbers of some kind for operating supplies, the method being to issue a requisition, which is nothing more or less than a check, used to pay the general storeskeeper for the goods and materials which he delivers to the factory. These requisitions will deliver all materials to Parts, Betterments, and Repairs, in process of manufacture, and be charged to Production, Betterment, or Repair orders, according to the nature of the work.

Repair orders will be charged to Reserves for Depreciations after completion, thus completing the inventory on these items. Betterment orders will be charged directly to the classified assets, thus completing the inventory on these items. All production orders, however, as rapidly as finished will be credited to Work in Progress and charged to D, Parts Stores, which will complete the inventory of this portion of manufactured production.

The next production order issued will be for E, Subassemblies, which will divide themselves up into a large number of groups, according to the character of the machine made, detailed specifications for which are shown on the arrangement of the piece key and operation card, the case illustrated showing 18 subassembly groups.

As soon as these production orders are completed, they pass into F, Subassembly Stores, thus completing the inventory on this class of work.

When it is desired to erect a machine or complete unit G, production orders are made out and requisitions are issued on Parts Stores and on General Stores, a combination of these with Subassembly Stores making the assembly of a complete unit possible.

As these production orders are finished, they are charged to H, Finished Stores, which simply becomes a warehouse proposition, Finished Stores then being credited as sales or shipments are made, and accounts receivable charged accordingly.

From the foregoing it will be seen that Inventory of General Stores B, relates absolutely to any and everything purchased; that the production work of the factory is then divided into six separate and distinct inventories during periods of fabrication.

C. Work in Progress for all Parts, Betterments, and Repairs.

D. Parts Stores Inventory for the product manufactured for sale.

E. Work in Progress on all subassemblies.

F. Inventory of all subassembly work done.

G. The Work in Progress on machine or unit erection.

H. Finished Stores of machines completed.

Physically, parts stores and subassembly stores may be kept in the same room, but in order that an absolute control may be had of inventories and uncompleted production orders constituting work in progress or unfinished orders, requisitions should be issued and controlled in such a way as to give the divisions scheduled above—a stores record being kept giving the details as well as the inventory values in each case.

III

The foregoing description of inventory control during fabrication relates to production only. To get a complete understanding of this inventory control it is necessary to understand just how it links up with accounting work, and to do this Figure 2, Factory Accounting Chart, is presented as an illustration of all of the controlling debits and credits that take place and by what means from an accounting point of view

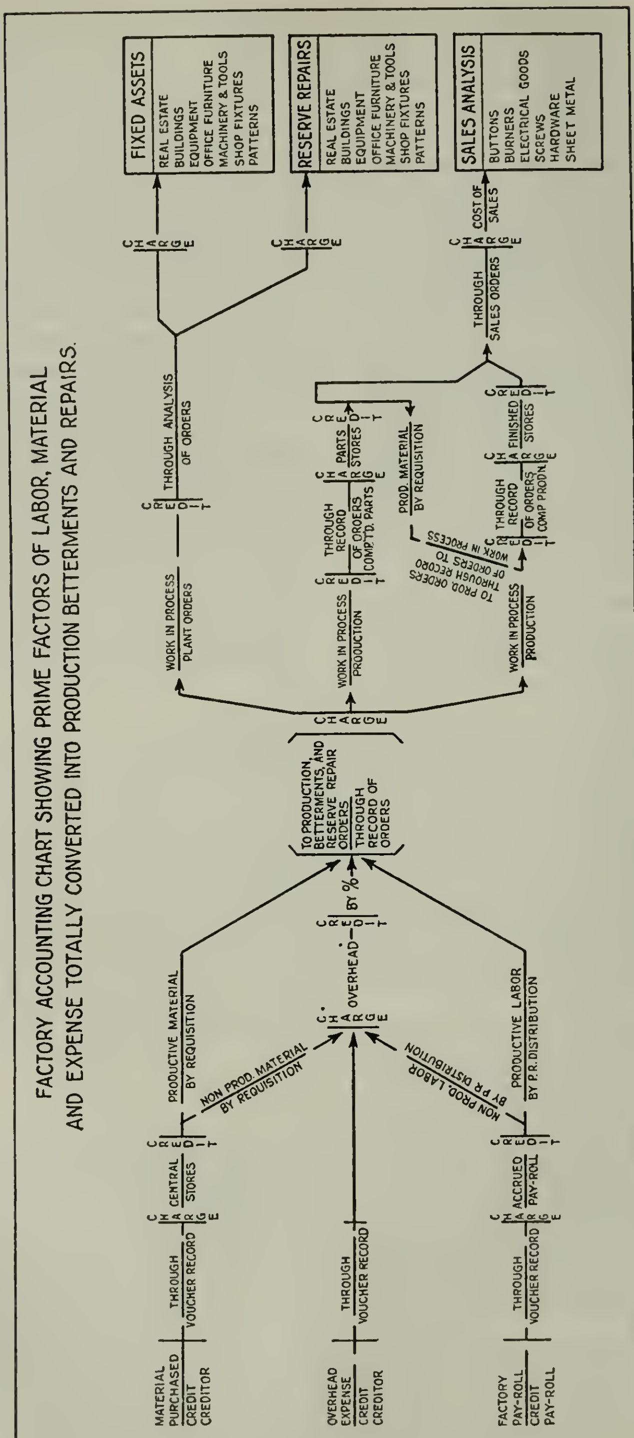

Figure 2. Factory Accounting Chart

during periods of fabrication, and also to illustrate in a very simple but complete way the skeleton upon which any and all kinds of factory accounting work would be assembled.

It makes no difference what a factory manufactures, it must use three things, viz., material, expense, and labor. This is illustrated on the chart under "Material Purchased," which is credited to creditor, "Overhead Expense," credited to creditor, and "Factory Pay-roll" credited to pay-roll, all three of which, as illustrated, go through the voucher record, the material going into central stores, central stores then being credited by that portion of the material which goes to non-productive or overhead expense, and that portion which goes to production.

In other words, as shown on the chart, overhead draws a certain portion of material, a certain portion of expense, and a certain portion of labor, which is made up by actual charges in dollars and cents. It then comes to a point where an order is issued to do something either for production, betterments, or reserve repairs. Into these orders there is then drawn certain materials, certain labor, and a certain amount of overhead, the latter on a percentage basis, all of which through a record of orders, is charged to either work in process production, or work in process for plant orders. As work in process for plant orders is credited it becomes chargeable either to fixed assets or reserve repairs as indicated on the chart, while work in process production is credited through record of orders, component parts, charged to parts stores, or is a credit to production orders through record of orders into finished stores, in the latter case, consisting often of work that is done directly on an order plus parts stores, which have been credited and drawn into such work. This chart shows how finished stores are credited through sales orders and cost of sales charged, which then enters into the sales analysis. Therefore, this chart represents the whole method of procedure in connection with factory accounting, indicating at the same time in connection with such accounting, just where production control is connected with it in its formation of inventories, not only during periods of fabrication but also as a final disposition into assets of some kind.

There is a definite principle in connection with factory accounting which has been set forth quite fully by the writer in his work called, "Unified Accounting Methods for Industrials," but which will bear reiteration at this point. This principle is, that any and all expenditures made during any particular time period, preferably a month, must be converted into inventoriable assets; and this chart shows in a very clear and concise way exactly how this principle is worked out, as the three prime things, material, overhead expense, and factory pay-roll, are absorbed into work in process of some kind. This work in process is then segregated into various stores inventories during periods of conversion according as orders are closed into costs, and as a final disposition is directly charged to some resting place either as a fixed asset, a reserve for repairs, or finished stores, the latter being taken into cost of sales for the sales analysis, any uncompleted work remaining in the factory as work in process. The whole series of transactions are accomplished by just three things: a properly designed time ticket for labor, a correctly designed and used stores requisition, and a method for issuing orders that will constitute a definite unit of measure on which to obtain costs, in other words, timekeeping, storeskeeping, and order control.

FIXED INVESTMENT CLASSIFICATION BY CONTROLLING ACCOUNT NUMBERS, NAMES, AND ITEMS

600. Land—Factory

This is a fixed asset account intended to cover all of the Real Estate and land on which factory buildings are placed or which may be used for yard or other industrial purposes. Therefore, in connection with this account it will not be necessary to set up a reserve for depreciation because of the fact that the treasury department does not allow any depreciation, as it is to be carried at the price at which it was purchased. The items chargeable to this account are:

Land—Factory

601. Land—Outside

This is understood to cover the value of all lands and properties owned by a company in the shape of Real Estate, outside of that used for purely industrial purposes. The items chargeable to this account are:

Land—Outside

602. Land Improvements—Factory

To this fixed asset account should be charged all improvements made, erected, or constructed on the factory lands, such as:

Bridges
Curbing
Dams
Embankments
Enclosures
Fences
Gates
Landscape Gardening
Retaining Walls
Roadways
Sidewalks
Sluiceways
Spillways

603. Land Improvements—Outside

To this asset account should be charged all improvements on outside land. It is, therefore, necessary to set up a depreciation account against these Land—Outside improvements for the purpose of stabilizing their repair costs. The items chargeable to this account are as follows:

Bridges
Curbing
Enclosures
Fences
Gates
Landscape Gardening
Retaining Walls
Roadways
Sidewalks

604. Buildings—Fireproof

To this account shall be charged all buildings considered as fireproof, which are constructed of reinforced concrete or brick and steel, as the percentage of depreciation which would be applied to these buildings would be much less than that applied to all other buildings. The value of the buildings shall cover improvements mentioned below, but will not cover systems as listed under the asset account "Inside Equipment," which are subject to a higher rate of depreciation than the building itself. The items chargeable to this account are:

Buildings—Fireproof
Craneways
Elevator Shafts
Elevator Wells

605. Buildings—Mill Construction

To this account shall be charged all buildings commonly and generally known as "Mill Construction," buildings built with brick or stone walls, wooden interior, and generally with slag, slate, or tin roofs, which are subject to a much higher rate of depreciation than the buildings under the classification "Buildings—Fireproof." The valuation of these buildings must be on the same basis as the preceding classification. Chargeable to this account are:

Buildings—Mill Construction
Craneways
Elevator Shafts
Elevator Wells

606. Buildings—Corrugated Iron and Metal

This asset account will include those buildings constructed of steel framework, and covered with corrugated iron or other sheet metal, including same items as under account No. 604.

607. Buildings—Wooden

To this account should be charged all well-made permanent wooden factory buildings in which it is desired to have a different percentage of depreciation and must embrace the same items as 604.

608. Buildings—Structures

To this account should be charged any and all of the numerous temporary and cheaply constructed classes of buildings, on which a much greater rate of depreciation should be applied than on any of the foregoing. It should include:

Aerial Bridges
Ice-houses
Leans
Pockets
Shanties
Sheds
Storage Places

609. Buildings—Houses

To this asset account shall be charged all buildings known and understood as "Houses," "Barns," and other out-buildings which are owned or used by the company and which are allowed a different percentage of depreciation. These buildings may be used for domestic or commercial purposes but not for factory purposes. The items chargeable to this account are:

Barns
Houses
Out-buildings

610. Inside Equipment

To this account shall be charged all of the items pertaining to what is ordinarily known as "Building Equipment," which, however, bears a certain depreciation of its own and therefore comprises a separate asset division. Items chargeable to this account are:

Acid Systems
Air Systems—High-pressure
Air Systems—Low-pressure
Annunciators
Bell Systems
Bowls—Toilet
Bowls—Wash
Boxes—Fire Alarm
Boxes—Watchmen's
Closets—Toilet
Drinking Fountains
Electric Systems—Lights
Electric Systems—Power
Fans—Ventilating
Fire Alarm Boxes
Fire Alarms
Fire Systems—Wiring
Fountains—Drinking
Fuel Oil Piping Systems
Fuel Oil Tanks (inside Bldgs.)
Gas Systems—City
Heating Systems—Hot-air

Heating Systems—Hot-water
Heating Systems—Steam
Ladders (attached to Bldgs.)
Lavatory Equipment
Lighting Systems
Lubricating Pipe Systems
Meters—Gas
Oil Systems—Fuel
Oil Tanks—Inside Bldgs.
Partitions (Steel) for Toilets, etc.
Pipe Lines
Piping Systems—Fuel Oil
Shower Baths
Sinks
Sprinkler Systems
Steam Systems—Ind. High-pressure
Steam Systems—Ind. Low-pressure
Steel Partitions for Toilet, etc.
Systems—Acid
Systems—Air
Systems—Bell
Systems—Clock
Systems—Ditch-water
Systems—Drinking-water
Systems—Electric Lighting
Systems—Electric-power
Systems—Sprinkler
Systems—Steam
Systems—Steam—Industrial
Systems—Ventilating
Systems—Watchmen's
Tanks—Fuel Oil (Inside Bldgs.)
Tanks—Oil (Inside Bldgs.)
Tanks—Water
Telephone Systems (not incl. instruments)
Toilet Bowls
Toilet and Lavatory Equipment
Track Systems—Industrial
Transformers—Small
Traps—High-pressure
Traps—Low-pressure
Traps—Float
Turntables—Industrial
Urinals
Ventilating Fans
Ventilating Systems—Blacksmiths' Shops
Ventilating Systems—Casting Shops
Ventilating Systems—Offices
Ventilating Systems—Plating-room
Ventilating Systems—Toilets
Wash Bowls
Watchmen's Boxes
Water-heaters
Water Systems—Mains and Lines
Water Systems—Drinking

611. Outside Equipment

To this account shall be charged all of the items outside of buildings of a service nature including:

Accumulators—Dust
Acid Systems
Air Systems—High-pressure
Air Systems—Low-pressure
Awnings
Dust Accumulators
Electric Systems—Lights
Electric Systems—Lights (Underground)
Electric Systems—Power (Overhead)
Electric Systems—Power (Underground)
Fire Systems—Wiring
Fuel Oil Piping Systems
Fuel Oil Tanks
Gas Systems—City
Heating Systems—Hot-water
Heating Systems—Steam
Hydrants
Lighting Systems—Gas and Electricity
Mains and Lines—Water
Manholes
Oil Systems—Fuel
Oil Tanks
Pipe Lines
Piping Systems—Fuel Oil
Pit Scales
Platforms
Railroad Scales
Railroad Systems—Sidings
Railroad Systems—Switches
Railroad Systems—Turntables
Railroad Systems—Tracks
Scales—Pit
Scales—Railroad
Sewer Systems
Sidings—Railroad
Switches—Railroad
Systems—Acid
Systems—Clock
Systems—Ditch-water
Systems—Drinking-water
Systems—Electric Lighting
Systems—Electric-power
Systems—Steam
Systems—Watchmen's

Tanks—Fuel Oil
Tanks—Oil
Tanks—Water (below ground)
Tanks—Water (above ground)
Tracks and Sidings—Railroad
Water Systems—Mains and Lines
Water Systems—Drinking

612. Power Equipment

To this account shall be charged machinery and equipment involved in producing mechanical or electrical energy as is specifically identified with the power plants. This will include all other power equipment, whether located in the power plant itself or about the plant, of a similar nature and devoted to a like purpose.

Air Compressors—Installed—Motor-driven
Air Compressors—Installed—Steam-driven
Air Lift Pumps
Ammeters—not Portable
Antimonial Lead Generators
Ash Hoppers
Atmospheric Valves
Automatic Injectors
Back Pressure Valves—Large
Barrel Rotary Pumps—Hand-operated
Battery Charging Rheostats
Blowers—Soot
Blowoffs
Blowoff Valves
Blue-print Machines
Boilers—Stationary
Boosters
Breakers—Circuit
Bucket Traps—Steam
Centrifugal Pumps—Power
Chain Grates
Circuit Breakers
Circulating Pumps
Compressors—Air
Compressors—Air—Installed—Motor-driven
Compressors—Air—Installed—Steam-driven
Condensers—Jet
Condensers—Surface
Converters—Rotary
Damper Regulators
Diaphragm Valves
Differential Traps—Steam
Draft Fans—Forced
Duplex Power Pumps
Dynamos
Economizers
Emergency Valves—Power Plant (large)
Exciters
Exhaust Heads
Expansion Traps—Steam
Fans—Forced Draft
Feed Water Measuring Instruments (installed)
Feed Water Pumps
Feed Water Regulators
Filters—Fuel Oil
Filters—Water
Fire Pumps
Float Traps—Steam
Force Pumps—Large
Forced Feed Oilers
Fuel Oil Filters
Fuel Oil Meters
Fuel Oil Pumps
Gauges—Pressure—Installed
Gauges—Vacuum—Installed
Gauges—Water
Generators—A. C.
Generators—Antimonial Lead
Generators—D. C.
Generators—Turbine
Generator—Plating
Governors
Governors—Oil Relay
Grates—Chain
Grates—Step
Heaters—Feed Water
Heaters—Hot-water
Hot-water Heaters
Impulse Turbines
Impulse and Reaction Turbines
Indicators—Steam
Injectors
Injectors—Automatic
Lubricators—Forced Feed
Measuring Instruments—Feed Water (installed)
Meters—Fuel Oil
Meters—Power Factor (not portable)
Mill Steam Engines
Non-return Traps—Steam
Oil Pumps—Power-driven
Oil Pumps—Steam
Oil Relay Governors

Oil Separators—Steam
Oil Switches on Switchboards
Oilers—Central Station
Oilers—Forced Feed
Pan Pulling Steam Engines
Piston Pumps
Plating Generators
Power—Air Compressing Machines
Power—Elec. Machs. (not motors)
Power—Steam Machines
Pressure Gauges (installed)
Pressure Regulators
Pumps—Air Lift
Pumps—Barrel Rotary—Hand-operated
Pumps—Centrifugal Power
Pumps—Circulating
Pumps—Duplex Power
Pumps—Feed Water
Pumps—Fire
Pumps—Force—Large
Pumps—Fuel Oil
Pumps—Oil—Power Driven
Pumps—Oil—Steam
Pumps—Piston
Pumps—Steam Turbine
Pumps—Turbine
Purifiers—Water
Reaction Turbines
Reciprocating Steam Engines
Reducing Valves—Air
Reducing Valves—Steam
Reduction Gears—Turbine
Refrigerating Machines
Regulators—Damper
Regulators—Feed Water
Regulators—Pressure
Return Traps—Steam
Rheostats—Battery Charging
Rotary Converters
Safety Valves
Screens—Traveling
Screens—Water
Separators—Oil—Steam
Separators—Steam
Soot Blowers
Spouts—Flexible—Power
Stationary Boilers
Steam Indicators
Steam Oil Pumps
Steam Separators
Steam Turbine Pumps
Step Grates
Stokers—Mechanical
Superheaters
Switches—Oil in Switchboards
Switchboards
Switchboards—Main
Switchboards—Main—Power and Light
Transformers—Large
Traps—Steam
Traps—Steam—Bucket
Traps—Steam—Differential
Traps—Steam—Expansion
Traps—Steam—Return
Traps—Steam—Non-return
Traveling Screens
Trimming Machines
Turbines
Turbine Generators
Turbines—High-pressure
Turbines—Impulse
Turbines—Impulse and Reaction
Turbines—Low-pressure
Turbines—Mixed-pressure
Turbine Pumps
Turbines—Reaction
Turbine Reduction Gears
Turbine Valve Gears
Vacuum Gauges —Installed
Vacuum Pumps
Valve Gears—Turbine
Valves—Atmospheric
Valves—Back-pressure—Large
Valves—Blowoff
Valves—Diaphragm
Valves—Emergency Power Plant (large)
Valves—Large—Power Plant
Valves—Reducing—Air
Valves—Reducing—Steam
Valves—Safety
Voltmeters (not portable)
Water Filters
Water Gauges
Water Purifiers
Water Screens
Wattmeters (not portable)
Whistles—Air
Whistles—Steam

613. Motors

To this account shall be charged all electric motors, together with their bases; electric motor compensators or motor starting devices, such as rheostats or controllers, small oil switches and remote control apparatus on which depreciations are to be written off. Any

and all new motors that are not installed must be placed in general stores, as must any and all other items, newly purchased, that are not installed ready for operation. In connection with motors it will be noticed that this account shall include all starting devices belonging to the motor, but will not include any wiring or belting.

Compensators
Control Apparatus—Remote
Controllers
Motors—Power above ¼ H.P.
Motor Starting Rheostats
Oil Switches—Motor Starting
Remote Control Switches
Rheostats—Motor Starting
Switches—Oil—Motor Starting
Switches—Remote Control

614. Machine Tools

To this account shall be charged any and all machine tools used in tool manufacture or elsewhere in the plant that distinguish themselves by being known as standard machine tools and which have a lower depreciation and a higher salvage value than special equipment of any kind.

Arbor Presses
Band Saws—Power Metal
Band Saws—Power Wood
Borers—Horizontal
Boring Mills
Centering Machines
Circular Cut-off Saws
Cold Saws
Cutter Grinders
Cutter and Reamer Grinders
Drills—Radial
Engine-lathes
Grinders—Cutter
Grinders—Cutter and Reamer
Grinders—Tool
Grinders—Twist-drill
Hack-saws—Power
Horizontal Borers
Horizontal Shapers
Jig-saws
Jointers
Lathes—Engine
Lathes—Precision
Lathes—Precision—Bench
Lathes—Speed
Metal Planers
Milling Machines—Universal
Mills—Boring
Mills—Turning
Pipe-threading Machines
Precision Lathes—Bench
Platers—Metal
Planers—Wood
Presses—Arbor
Presses—Hydraulic—Straightening
Radial Drills
Reamer Grinders
Rip-saws
Sanding Machines
Saws—Circular—Cut-off
Saws—Circular—Rip
Saws—Cold
Saws—Combination Rip and Cut-off
Saws—Jig
Saws—Power—Band Metal
Saws—Power—Band Wood
Saws—Power Hack
Saws—Rip
Saw Sharpening Machines
Saws—Swing
Shapers—Horizontal
Shapers—Vertical
Sharpening Machines—Saw
Slotters—Vertical
Speed-lathes
Straightening Presses—Hydraulic
Swing-saws
Threading Machine—Pipe
Tool-grinders
Trimmers—Wood
Turning-mills
Twist-drill Grinders
Vertical Shapers
Vertical Slotters
Wood-planers
Wood-trimmers
Woodworking Machines, Standard

615. Fabricating Machinery

To this account should be charged all equipment and machines used in the manufacture of articles which are not and cannot be considered strictly machine tools. The principal items chargeable to this account are:

Alligator Shears
Arch Presses
Automatic Buffing Machines
Auto. Chucking and Turning Machines
Auto. Fabricating Machines
Auto. Hand-screw Machines
Automatic Milling Machines
Automatic Screw Machines
Automatic Shaving Machines
Automatic Straighteners and Cutters
Barrel Head Turners
Belt Lacers—Power
Benches—Draw
Bench Drills—Power
Bench Hand-milling Machines
Billet Saws
Billet Shears
Blockers
Centrifugal Extractors
Centrifugal Oil-separators
Centrifuges
Circular Shears
Coiling Machines
Coilers—Rod
Coilers—Wire
Compression Testing Machines
Cutters—Power Belt
Cutting Machines—Cam
Cutters—Power—Sprue
Die Sinking Machines
Disc Grinders
Draw Benches
Drawing Machines
Drilling Machines—Sensitive
Drilling Machines—Sliding Head
Drilling Machines—Stationary Head
Drills—Bench-power
Drills—Gang
Drills—Multiple Spindle
Drills—Upright
Drop Boards
Drop Hammers
Drop Presses
Drop Stamps
Edging-lathes
Engines—Pan
Extractors—Centrifugal
External Grinders
Extractors—Hydro
Extractors—Oil
Fabricating Machines—Automatic
Facing Machines
Foot Presses
Forging Machines
Gang Drills
Gate Shears
Gear-cutting Machines
Grinders—Disc
Grinders—Electric Station
Grinders—External
Grinders—Internal
Grinders—Surface
Hammers—Drop
Hammers—Power
Hammers—Steam
Hammers—Trip
Hand-milling Machines
Hand Screw Machines
Hand Screw Machines—Automatic
Heading Machines
Heading Presses
Hydroextractors
Internal Grinders
Jointers—Stave
Knuckle Joint Presses
Lacers—Belt-power
Lathes—Clock
Lathes—Edging
Lathes—Spinning
Marking Machines
Milling Machines—Automatic
Milling Machines—Bench
Milling Machines—Bench Hand
Milling Machines—Hand
Milling Machines—Lincoln Type
Milling Machines—Thread
Milling Machines—Vertical
Mills—Rolling
Mortising Machines
Multiple Spindle Drills
Nailing Machines
Nut Trappers
Oil Extractors
Oil-separators—Centrifugal
Pan Engines
Pillar Presses
Plate-bending Rolls
Plate Shears
Pointing Machines
Polishing Heads
Polishing Jacks
Polishing Stands
Power Presses
Power Punching Machines
Presses—Arch
Presses—Cam—Double Action
Presses—Drop
Presses—Foot

Presses—Heading
Presses—Knuckle Joint
Presses—Power
Presses—Shear
Profiling Machines
Punching—Power Machines
Riveting Machinery
Roll Straighteners—Self-feeding
Rollers—Thread
Rolling Mills
Rolls—Plate Bending
Swagers
Surface Grinders
Stripping Machines
Straighteners—Wire Rotary
Straighteners and Cutters—Automatic
Steam Hammers
Stationary Head Drilling Machines
Stave Jointers
Stamps—Drop
Sprue Cutters—Power
Shaving Machines—Automatic
Spring Winding Machines
Spooling Machinery
Tack Cutting Machinery
Tappers—Nut
Testing Machines—Tensile Strength
Tapering Presses
Tapping Machines
Testing Machines—Compression
Thimble Machines—Automatic
Thread-milling Machines
Thread-rollers
Trip-hammers
Turners—Barrel-head
Turning Machines for Brass
Upright Drills
Upsetting Machines
Vertical Milling Machines
Wire Rotary Straighteners
Wire Forming Machines
Wire Coilers

616. Fabricating Machinery—Special

To this account should be charged any and all machinery purchased or made for special contracts, such as government work, etc., and which is of such a nature that it cannot be used for any other purpose and consequently will have to be written off into the contract on an amortization basis. In connection with machinery of this character, all special tools designed for the machines must also be charged up to this account and amortized according to the life of the contract.

617. Fabricating Equipment

To this account should be charged any machinery and equipment not otherwise provided for by special classifications. The principal items chargeable to this account are:

Acetylene Welding Equipment
Acetylene Welding Torches
Annealing Furnaces—Electric
Annealing Furnaces—Gas
Annealing Furnaces—Oil
Annealing Tanks
Anvils
Barrels—Burnishing
Barrels—Rotating—Plating
Barrels—Tumbling
Belting, Gauging, or Slitting Machines
Belt Gluing Presses
Belts—Scarfing
Belt-testing Machines
Bench Forges
Benches—Shop
Bending Plates
Blacksmith Shop Forges
Blacksmith Shop Forge Blowers
Blasts—Sand
Blasts—Shot
Blowers—High-pressure
Blowers—Low-pressure
Brakes—Cornice—Sheet Metal
Brass—Separators
Burnishing Barrels
Cabinets—Lubricating or Cutting Oil
Casting Furnaces—Electrical
Casting Furnaces—Gas
Card-punching Machines—Electrical
Casting Furnaces—Oil
Centrifugal Driers
Centrifugal Separators
Cleaning Tanks
Coal Forges
Cooperage Machinery (except standard woodworking machinery)
Core Ovens
Crane Ladles
Crimping Machines—Hand
Crushers—Ore
Cupolas

Disc Grinder Presses
Driers—Centrifugal
Edging Machines—Power
Edging Machines—Hand
Electric Arc Welding Apparatus
Electric Riddles
Electric Vibrators
Exhausters
Exhausting Fans
Fans—Exhausting
Filters—Oil
Folding Machines—Hand
Forge Blowers—Blacksmith Shop
Forges—Coal
Forges—Gas
Forges—Miscellaneous
Forges—Oil
Forges—Shop—General
Forming Machines
Furnaces—Annealing Electric
Furnaces—Annealing Gas
Furnaces—Annealing Oil
Furnaces—Casting Electric
Furnaces—Casting Gas
Furnaces—Casting Oil
Furnaces—Gas—Bench
Furnaces—Mill
Furnaces and Muffles—Mill
Gas Bench Furnaces
Gas Forges
Gauging or Slitting Belts
Grooving Machines—Hand
Hand-crimping Machines
Hand-edging Machines
Hand-folding Machines
Hand-grooving Machines
Hand-pumps
Hand-rim Machines
Hand-seaming Machines
Hand-tucking Machines
Hand-turning Machines
Hand-wiring Machines
Japanning Ovens
Jewelers' Machines
Jigs—Pulsator
Kettles—Large—Steam
Lacquer Ovens
Ladles—Crane
Lead Pots
Lubricating or Cutting Oil Cabinets
Machine Washers
Metal Tubs
Mill Furnaces and Muffles
Mineral Pulverizers
Molding Machines
Molding Presses
Muffles—Oil
Muffles—Wood
Oil Drawing Tanks
Oil Filters
Oil Forges
Oil Muffles
Oil-separators—Gravity
Ore Crushers
Ovens—Core
Ovens—Japanning
Ovens—Lacquer
Ovens—Large—Drying
Oxygraphs
Pickling Equipment
Pickling Tanks
Pickling Tubs
Pipe Benders
Pipe Cutters
Plates—Bending
Plating Barrels—Rotating
Plating Equipment
Plating Tanks
Planetary Pulverizers
Pneumatic Riddles
Pneumatic Vibrators
Pots—Lead
Power-edging Machines
Presses—Belt Gluing
Presses—Disc Grinder
Presses—Molding
Processing Tanks
Pulsator Jigs
Pumps—Hand
Quenching Tanks
Reclaiming Machinery and Equipment
Revolving Trommel Screens
Riddles—Electric
Riddles—Pneumatic
Riddling Machines
Rim Machines—Hand
Rotating Plating Barrels
Salvage Machinery and Equipment
Sand Blasts
Saws—Cold—Power
Scarfing—Belt
Screens—Revolving Trommel
Seaming Machines—Hand
Separators—Centrifugal
Separators—Brass
Separators—Centrifugal Oil
Separators—Magnetic
Separators—Ore

Shears—Tin-shop Bench
Sheet Metal Brakes
Shop Benches
Shot Blasts
Spraying Equipment
Switchboards—Telephone
Tanks—Air Receivers—Large
Tanks—Annealing
Tanks—Cleaning
Tanks—Pickling
Tanks—Plating
Tanks—Processing
Tanks—Quenching
Telephone Switchboards
Tenoning Machines
Testing Machines—Belt
Tin Shop—Bench Machines
Tubs—Metal
Tubs—Pickling
Tubs—Plating
Tubs—Wooden
Tucking Machines—Hand
Turning Machines—Hand
Vibrators—Electric
Vibrators—Pneumatic
Washer—Machine
Welding Apparatus—Electrical Arc
Welding Equipment—Acetylene
Wiring Machinery—Hand
Wood Muffles
Wooden Tubs

618. Hoisting and Conveying Machinery

To this account should be charged any and all devices used for hoisting and conveying, except transportation equipment. The principal items chargeable to this account are:

Air Hoists
Apron Conveyers
Ash Conveyers
Ash Handling Equipment
Barrel Conveyers
Belt Conveyers
Buckets—Coal
Bucket Conveyers
Capstans
Chain Conveyers
Buckets—Grab
Chain Hoists
Coal Buckets
Coal Crushers
Coal Hoists
Coal Hoists and Conveyers
Coal Hoppers
Coal Loaders—Portable Endless Belt
Coal Pulverisers
Coal Valves
Conveyers—Apron
Conveyers—Ash
Conveyers—Barrel
Conveyers—Belt
Conveyers—Bucket
Conveyers—Cable
Conveyers—Chain
Conveyers—Coal
Conveyers—Drag
Conveyers—Flight
Conveyers—Package
Conveyers—Platform
Conveyers—Rope
Conveyers—Scraper
Conveyers—Screw
Crabs—Hoisting
Cranes—Electric Traveling
Cranes—Hand Traveling
Cranes—Jib
Cranes—Portable—Canton Type
Cranes—Wall
Crushers—Coal
Drag Conveyers
Driving Mechanism for Conveyers
Drums—Hoisting—Portable—Electric
Electric Elevators
Electric Traveling Cranes
Elevating Machinery
Elevators—Electric
Elevators—Hydraulic
Elevators—Mechanical
Elevators—Pneumatic
Elevators—Portable
Engines—Steam—Pan Pulling
Equalizing Gears
Flight Conveyers
Gears—Equalizing
Grab Buckets
Hand Traveling Cranes
Hoists—Air
Hoists—Chain
Hoists—Coal
Hoists—Hydraulic
Hoists—Pneumatic
Hoists and Conveyers—Coal
Hoisting Crabs

Hoisting Drums—Portable Electric
Hoisting Steam Engines—Portable
Hoisting Winches—Electric-driven
Hoisting Winches—Hand-driven
Hoisting Winches—Steam-driven
Hoppers—Ash
Hoppers—Coal
Hydraulic Elevators
Hydraulic Hoists
Jib Cranes
Loaders—Coal—Portable—Endless Belt
Loaders—Wagon and Truck
Magnets—Electro Lifting
Mechanical Elevators
Monorail Traveling Hoists
Package Conveyers
Pan Pullers
Pan Pullers—Electric
Pan Pullers—Steam
Platform Conveyers
Pneumatic Elevators
Pneumatic Hoists
Pullers—Pan
Pullers—Pan—Electric
Pullers—Pan—Steam
Pulverizers—Coal
Rope Conveyers
Scraper Conveyers
Screw Conveyers
Steam Engines—Hoisting
Switches—I-Beam
Switches—Monorail
Switches—Overhead—Trolley System
Systems—Trolley—Overhead—Monorail
Tiering Machines
Trolleys
Trolley Systems—Overhead Monorail
Valves—Coal
Wall Cranes
Winches—Hoisting—Electric-driven
Winches—Hoisting—Steam-driven
Winches—Electric Hoisting or Pulling
Winches—Steam Hoisting or Pulling
Windlasses

619. Hydraulic Machinery

All hydraulic machinery except elevators should be charged to this account as the maintenance and repair work on this equipment is more constant than on all other equipment. Items chargeable to this account are:

Accumulators—Hydraulic
Binding Machines—Hydraulic
Hydraulic Accumulators
Hydraulic Binding Machines
Hydraulic Extrusion Presses
Hydraulic Jacks
Hydraulic Presses
Hydraulic Pumps
Hydraulic Pumps—High-pressure
Hydraulic Testing Machinery
Hydraulic Wheel Presses
Jacks—Hydraulic
Presses—Hydraulic
Presses—Hydraulic Extrusion
Presses—Hydraulic Wheel
Pumps—Hydraulic
Pumps—Hydraulic—High-pressure
Pumps—Triplex Power—Hydraulic
Tanks—Water—High-pressure
Testing Machinery—Hydraulic
Triplex Power Pumps—Hydraulic
Water Tanks—High Pressure

620. Semidurable Tools and Instruments

To this account shall be charged all tools and instruments of a semidurable nature. This, however, does not mean anything in connection with cutting or perishable tools of any kind, except insomuch as it might apply to dies. All dies, jigs, gauges, fixtures, etc., which are charged up to contracts as a part of the expense of doing the work should not appear in this account. A general classification that accounts for semidurable tools and instruments is as follows:

Air-driven Grinders
Air Hammers—Port.
Air Meters—Port.
Ammeters—Port.
Analytical Balances
Apparatus—Chemical
Apparatus—Electrical
Apparatus—Mechanical
Apparatus—Physical
Arbors
Balopticons
Bevel Protractors
Blanking Dies
Bombs—Electrical Ignition

Boring Bars
Box Tools
Breast Drills
Calibrating Machinery
Calorimeters
Cameras
Center Grinders
Centers—Index
Chemical—Apparatus
Chipping Hammers—Pneumatic
Chucks—Large
Chucks—Magnetic
Chucks—Pneumatic
Classimeters
Clocks—Watchmen's
Coppers—Electrical Solder
Counters (not furniture)
Counters—Speed
Couples
Couples—Recalescent
Couples—Thermo
Crucible Furnaces—Laboratory
Cutting Machines—Electrical Portable
Dial Feeds
Dies—Blanking
Dies—Drawing
Dies—Forging
Dies—Forming
Dies—Piercing
Drawing Dies
Drilling—Machines—Breast
Drills—Breast
Drills—Flexible Shaft
Drills—Hand and Breast
Drills—Portable Electric
Drills—Portable Pneumatic
Drill Press Vises
Drills—Ratchet
Dynamometers—Portable
Electrical Apparatus
Electric Drills—Portable
Electric Ignition Bombs
Electric Meters—Miscellaneous Portable
Electric Meters—Portable
Electric Plates
Electric Solder Coppers
Electric Tools—Portable
Etchographs
Feeds—Dial
Face Plates
Feeds—Roll
Fixtures and Jigs
Flexible Shaft Drills
Forging Dies
Forming Dies
Furnaces—Crucible—Small Laboratory
Furnace Tubs
Galvanometers—Portable
Gang Layouts—Cutting and Drawing Tool
Gas Analysis Apparatus
Gas Meters—Installed—Inside
Gas Meters—Portable
Gauges—Measuring
Gauges—Portable
Gear Pullers
Glue Pots—Electric
Grinders—Air-driven—Portable
Grinders—Center
Grinders—Electric—Portable
Hammers—Air Portable
Hammers—Chipping Pneumatic
Hammers—Pneumatic Portable
Hammers—Sand—Pneumatic
Hand Belt Lacers
Hand and Breast Drills
Heads Universal Dividing
Heat Meters—Portable
Hygrometers
Index Centers
Indicators—Speed
Jacks—Miscellaneous
Jigs and Fixtures
Lacers—Belt—Hand
Layouts—Gang—for Cutting and Drawing Tools
Lens
Magnetic Chucks
Mandrels
Measuring Machines—Pitch
Measuring Machines—Precision
Measuring and Recording Instruments—Portable
Mechanical Apparatus
Meters—Portable
Meters—Portable—Air
Meters—Portable—Electric
Meters—Portable—Gas
Meters—Portable—Heat
Meters—Portable—Oil
Meters—Portable—Recording
Meters—Portable—Steam
Meters—Portable—Water
Micro Metallographs
Microscopes
Microscopes—Metallurgical
Microscopes—Petrilogical
Milling Machine Vises
Millivoltmeters—Portable

Oil Meters—Portable
Optical Pyrometer Scales
Ovens—Small Electric Drying
Photomicrographic Apparatus
Physical Apparatus
Piercing Dies
Pipe Wrenches
Pitch Measuring Machines
Plates—Electrical
Plates—Face
Plates—Surface
Pneumatic Chucks
Pneumatic Drills—Portable
Pneumatic Hammers—Portable
Pneumatic Riveters—Portable
Pneumatic Tools—Portable
Pots—Electric Glue
Precision Measuring Machines
Projectors
Protractors—Bevel
Pullers—Gear
Pulmotor Outfits
Pyrometers
Pyrometers—Recording
Pyroscopes
Pyrovolters
Ratchet Drills
Ratchet Stocks
Recalescent Couples
Recording Instruments—Miscellaneous
Recording Meters—Portable
Recording Pyrometers
Recording Thermometers
Reflectoscopes
Riveters—Portable—Pneumatic
Roll Feeds
Sand Rammers—Pneumatic
Scales—Optical Pyrometer
Scleroscopes
Stakes—Tin Shop
Steam Meters—Portable
Stereopticons
Stills
Stocks
Stocks—Ratchet
Stop-watches
Sub-presses
Sulphur Turbidimeters
Surveyors' Instruments—Transit
Tachometers
Testing Machines—Brinell Type
Thermocouples
Thermometers—Recording
Tools—Box
Tools—Electric Portable
Torches—Acetylene Welding
Transformation Point Apparatus
Transformers—Portable
Tube Furnaces
Turbidimeters—Sulphur
Type Cutters—Hand
Vises
Vises—Drill Press
Vises—Milling Machine
Voltmeters—Portable
Watchmen's Clocks
Water Meters—Portable
Watches—Stop
Wattmeters—Portable
Winches—Hoisting—Hand-driven
Wrenches—Pipe

621. Shop Fixtures and Fittings

To this account shall be charged all supplementary equipment used in factory departments, such as:

Barrows—Coal
Barrows—Shop
Blackboards
Bowls—Wash—Temporary
Boxes—Shop
Boxes—Tote
Cabinets—Oil
Cabinets—Miscellaneous
Cabinets—Tool
Cans—Waste—Large
Chairs—Factory
Clock Stands
Coal Barrows
Containers
Counter Scales
Cupboards—Factory Use
Counting Scales
Decimal Scales
Dormant Scales
Druggists' Scales
Fire Ladders
Flasks—Snap
Flasks—Steel
Grocers' Scales
Hand Ladders—Portable
Ladders—Fire
Ladders—Hand Portable
Lathe Pans

Lockers—Metal
Lockers—Wood
Metal Lockers
Oil Cabinets
One-man Cabinets
Pans—Lathe
Partitions—Temporary
Platforms—Truck
Plumbing Machinery
Racks—Stock—Portable
Racks or Shelving—Store
Racks or Shelving—Tool
Reels—Wire
Scales—Counting
Scales—Counter
Scales—Decimal
Scales—Dormant
Scales—Druggists'
Scales—Grocers'
Scales—Inside
Scales—Letter
Scales—Portable
Scales—Miscellaneous Portable
Scales—Special for Weighing Coal
Scales—Warehouse
Snap Flasks
Shop Boxes
Stands—Clock
Stands—Tool
Stevedore Trucks
Steel Flasks
Step-ladders
Stock Racks—Portable
Stools—Factory
Store Racks or Shelving
Supports for Motors
Tanks—Miscellaneous—Shop
Tool Cabinets
Tool Racks or Shelving
Tote Boxes
Transveyers
Trucks—One-man
Trucks—Hand—Misc.
Truck Platforms
Trucks—Stevedore
Trucks—Warehouse
Wash Bowls (Temporary)
Warehouse Scales
Waste Cans—Large
Wire Reels
Wooden Lockers

622. Office Furniture and Equipment

To this account shall be charged all kinds of office furniture and equipment used in the main office and department offices throughout the plant. Items chargeable to this account are as follows:

Adding Machines
Addressographs
Billing Machines
Bookcases
Boards—Drawing
Cabinets—Filing
Calculating Machines
Card Racks
Carpets
Ceiling Fans
Chairs—Office
Check—Writers
Cleaners—Vacuum
Clocks—Cost Recording
Clocks—Dating
Clock Systems—In and Out
Clocks—Time
Clothes—Trees
Compotypes
Comptometers
Coverings—Floor
Copy Presses
Cost Recorders
Cost Recording Clocks
Couches
Dating Clocks
Desks
Desk Lamps—Portable
Dictaphones
Dictionaries—Large
Dictionary Stands
Drafting Machines
Drawing Boards
Drawing Tables
Duplicators
Electric Fans—Portable
Fans—Ceiling
Fans—Elec. Port.
Filing Cabinets
Floor Coverings
Lamps —Desk Portable
Letter Openers—Large
Letter Scales
Letter Sealing Machinery
Listing Machines
Mimeographs

Multigraphing Machinery
Numbering Machinery
Presses—Copy
Punching Machinery—Card—Electrical
Racks—Card
Recorders—Cost
Recorders—Time
Rugs
Rules—Slide
Safes
Sealing Machines—Letter
Sections—Filing
Slide Rules
Sorting Machinery—Card
Stamps—Time
Stands—Wood
Stenciling Machinery
Tables—Drawing
Tables—Furniture
Tabulating Machinery
Telephone Instruments
Telegraph Instruments
Ticklers
Time Clocks
Time Recorders
Time Stamps
Trays—Filing
Trees—Clothes
Typewriters
Vacuum Cleaners

623. Transmission Equipment

To this account shall be charged all equipment and devices used in transmitting power, including line shafting, jack shafting complete with bearing. This account does not include items under the Belting account or countershafts, which are a part of the machinery to which they apply. The account does include:

Clutches
Clutches—Friction
Collars
Connections—Flexible
Countershafts—Complete (extra)
Couplings
Drive Sprockets
Flexible Connections
Friction Clutches
Gearing
Hangers—Shaft
Idlers
Jack Shafting
Line Shafting
Shaft Hangers
Shafting—Line
Shafting—Jack
Sheaves

624. Belting

To this account shall be charged any and all kinds of Belting or flexible connections used through the factory, in view of the fact that this equipment depreciates much faster than the items included in the Transmission Equipment Asset account No. 623. To this account should be charged:

Belting Canvas
Belting Leather
Belting—Miscellaneous Fabric
Belting Rubber
Canvas Belting
Chains—Drive
Drive—Chains
Drive—Ropes
Leather Belting
Rope Drives
Rubber Belting

625. Construction Machinery

To this account should be charged any and all machinery equipment used in connection with general yard maintenance work, such as used by concrete workers, builders, etc., as:

Air Compressors—Portable—Steam-driven
Air Compressors—Portable—Motor-driven
Air Compressors—Portable—Gas Engine-driven
Barrows—Wheel
Block Machinery—Concrete
Boilers—Portable
Board Drops
Boats—Stone
Bolt Cutters—Power
Buckets—Concrete and Stone
Buckets—Concrete
Buckets—Orange Peel
Buffing Machines

Buffing Machines—Automatic
Bull Blocks
Bulldozers
Burring Machines
Cam Cutting Machines
Cars and Tracks—Concrete—Narrow Gauge
Cam Presses—Double Action
Compressors—Air—Portable—Gas Engine Driven
Compressors—Air—Portable Steam Driven
Concrete Buckets
Concrete and Stone Buckets
Concrete Cars and Tracks—Narrow Gauge
Concrete Chutes
Concrete Towers
Concrete Wagons
Crushers—Stone
Contractors' Pumps
Chutes—Concrete
Derricks—Portable
Diaphragm Pumps
Diggers—Ditch
Ditch Diggers
Drivers—Pile
Drums—Hoisting—Portable Electric
Drums—Hoisting—Portable Steam
Electric Drums—Portable Hoisting
Forges—Hand Portable
Hammers—Steam—Portable Pile Driver
Hand Forges—Portable
Heaters—Tar
Lawn Mowers
Lawn Rollers
Mowers—Lawn
Oilers—Road
Orange Peel Buckets
Pile Drivers
Planimeters
Portable Boilers
Pumps—Contractors'
Pumps—Diaphragm
Revolving Screens—Crushed Stone
Revolving Screens—Sand
Road Oilers
Road Scrapers
Rollers—Lawn
Rollers—Road Steam
Scrapers—Road
Scrapers—Wheel
Scrapers—Revolving—Crushed Stone
Screens—Revolving Sand
Shovels—Steam
Steam Drums—Hoisting—Portable
Steam Engines—Hoisting—Portable
Steam Hammers—Portable—Pile Driving
Steam Road Rollers
Steam Shovels
Stone Boats
Stone Crushers
Tar Heaters
Torches—Portable
Towers—Concrete
Tracks—Portable—Industrial
Wagons—Concrete
Wheelbarrows
Wheel Scrapers

626. Transportation Equipment

To this account shall be charged any and all transportation equipment classified as automobiles, trucks, and the like. All small trucks operated by hand and used throughout a plant are to be classified as Shop Fixtures and Fittings. This account includes:

Ash Cars—Small Industrial
Automobiles—Electric
Automobiles—Gas
Cars—Coal—Small Industrial
Cars—Ash—Small Industrial
Cars—Box—Railroad
Cars—Flat—Railroad
Cars—Gondola—Railroad
Cars—Railroad—Miscellaneous
Cars—Fire—Hose
Carts—Horse-drawn—Bottom Dump
Carts—Horse-drawn—End Dump
Chemical Engines
Coal Cars—Small Industrial
Engines—Chemical
Fire Hose Carts
Fire Ladder Wagons
Fire Wagons—Gas
Plows—Snow
Pumps—Tire Air
Snow Plows
Sprinkling Wagons
Starting Systems—Motor
Tire Pumps—Air
Trailers—Electric
Trailers—Mill
Trailers—Truck

Trailers—Yard
Trucks—Industrial—Electric
Trucks—Electric
Trucks—Gas
Trucks—Industrial—Gas
Trucks—Muffle
Vehicles—Horse-drawn
Vehicles—Motor Propelled
Wagons—Fire Gas
Wagons—Fire Ladder
Wagons—Horse-drawn
Wagons—Sprinkling

627. Patents

To this account shall be charged all patent rights, trade-marks, copyrights, etc., the charge consisting first of the actual cost for obtaining such patents, including any experimental work; that is to say, it shall only include the actual cost in money spent on the patent as a first consideration. If at any time the value of the patent is such as to capitalize it as a value, it must be added to this account by a specifically authorized journal entry. Chargeable to this account are:

Patents

628. Second-Hand Stores

To this account should be charged all equipment covering the entire range of fixed assets, as per their classification, which have been salvaged and charged to these stores, and the storeskeeping system must be such as to carry it under the classification of fixed assets and by items under each class, which will be as follows:

Inside Equipment
Outside Equipment
Power Equipment
Motors
Machine Tools
Fabricating Machinery
Fabricating Machinery Special
Fabricating Equipment
Hoisting and Conveying Machinery
Hydraulic Machinery
Semidurable Tools and Instruments
Shop Fixtures and Fittings
Office Furniture and Equipment
Transmission Equipment
Belting
Construction Machinery
Transportation Equipment

All such junk as would be handled and sold by the salvage stores would also be classified under this head.

IV

Attention is again called to the fact that the question of depreciation percentages is one on which there is a great deal of difference of opinion, but whatever the percentages are as finally accepted, they are usually passed upon by the board of directors because the setting up of reserves for depreciation directly affects the Profit and Loss account. In other words, if it were not for these depreciations, the profits would be that much greater, and therefore the percentage adopted is generally subject to the authorization of the board of directors. All rates should be based on normal operating conditions. In case of a plant's operating under extraordinary conditions, proportionally higher rates should be used.

Depreciation is a three-element factor:

1. That depreciation due to natural decay, according to its calendar life.
2. That provision which must be made for obsolescence.
3. That part which is due to wear and tear, and consequently replaceable to a greater or less extent by repairs.

Based on this, if repairs are applied, it is in fact a restoration of depreciation and should be paid for by a reserve set aside for just such work. The best known practice today is to figure that

25 per cent of depreciation is due to natural decay, 25 per cent for obsolescence provisions, and 50 per cent for wear and tear. Therefore, by the charging of repairs to depreciation reserves, it can never reduce them more than 50 per cent, provided the percentage used has been correctly estimated. When the repairs commence to exceed 50 per cent of the total depreciation amount on any particular machine or classification of machines, the amount in excess of this is a direct encroachment upon obsolescence and an investigation should be immediately made as to whether or not the time has come for complete obsolescence and replacement of the items in question by equipment less expensive to maintain; and it is this comparability in analysis that has really made almost functional the charging up of repairs to depreciation or fixed assets. It has been acknowledged as equitable by the United States government, and has for a still further purpose the stabilizing of costs. In other words, instead of charging all of these repairs directly to expense, leading to wide variables during different periods of the year, or from month to month, we have a constant charge for this kind of expense which makes

DEPRECIATION PERCENTAGES
FOR
FIXED INVESTMENTS BY CLASSIFICATION

	Per Cent—Depreciation
600. Land—Factory	0
601. Land—Outside	0
602. Land Improvements—Factory	5
603. Land Improvements—Outside	5
604. Buildings—Fireproof	3
605. Buildings—Mill Construction	5
606. Buildings—Corrugated Iron and Steel	10
607. Buildings—Wooden	10
608. Buildings—Structures	12½
609. Buildings—Houses	7½
610. Inside Equipment	7½
611. Outside Equipment	10
612. Power Equipment	7½
613. Motors	10
614. Machine Tools	7½
615. Fabricating Machinery	10
616. Fabricating Machinery—Special	10–100
617. Fabricating Equipment	25
618. Hoisting and Conveying Machinery	25
619. Hydraulic Machinery	12½
620. Semidurable Tools and Instruments	25
621. Shop Fixtures and Fittings	20
622. Office Furniture and Equipment	20
623. Transmission Equipment	10
624. Belting	20
625. Construction Machinery	25
626. Transportation Equipment	25
627. Patents	—
628. Second-hand Stores	½ of above as per classification

permanent and stable this factor in so far as it influences overheads, either as a whole or by departments.

Rates on special machinery must depend upon the estimated period of its present use and their adaptability for other use, but in giving this point consideration, amortization must not be confounded with depreciation. That is, if special equipment has been purchased for special contracts, it should be included in the cost of these contracts, and when the contracts are completed and no further use of the machines can be made, they should be appraised at some salvage value, the contract or the general expense of the company credited with the salvage value; and then all such equipments should be charged to Salvage Stores. Any profits accruing from its sales, over and above this account will be a profit on salvage stores. All equipment handled in this way should not be charged up to the regular assets of the company but should be charged to Manufacturing Machinery—Special, and charged off monthly according to the life of its estimated usage, for the special purpose for which it was bought, to Manufacturing Machinery—Special—Amortization; and this special depreciation account should be applied only to the departments using the equipment.

The foregoing percentages are recommended for consideration in connection with the classification of assets given and it is suggested that the percentage be applied each year to the original cost, and not to the residual value—this for the reason that repairs are constantly replacing depreciation, that obsolescence has frequently taken place and new equipment has been installed, and because the tendency of any business is one of continual growth and expansion.

V

In order to control investments in materials, tools, and semimanufactured items, and render a proper distribution of values and their uses, it is absolutely necessary to put them under certain inventory controls both by quantity and by valuation, as it is only by this method of procedure that a true financial statement of the company's affairs can be obtained each accounting period as well as an authentic and authorized usage of such materials as required for any purpose. In other words, without a proper control and accounting of any and all kinds of materials and tools it is impossible to compute correct costs or obtain correct financial statements. In principle, the method of procedure is always perfectly simple if the fact is kept in mind that no materials of any kind whatsoever can be purchased without going into an inventory of stores, and that these materials can never be taken from stores without giving a properly authorized requisition showing to what use the materials must be charged.

In a small concern there are generally three kinds of stores:

General Stores, which consists of raw materials.

Parts Stores, which consists of semifinished goods.

Finished Stores, which consists of finished goods.

But in the larger concerns these stores are divided up to a greater extent, going into such detail as comes under merchandise stores, parts stores, finished stores, and second-hand stores, each of which is divided up into several sub-classifications. To cover this, a set-up for controlling accounts might be as follows:

STORES CLASSIFICATION
BY
CONTROLLING ACCOUNT NUMBER AND NAME

Merchandise
- 100. General Stores
- 101. Base Metal Stores
- 102. Scrap Stores
- 103. Fabricated Metal Stores
- 104. Tool Stores
- 105. Salvage and Reclamation Stores

Parts Stores
- 200. Stock Parts
- 201. Overproduced Parts
- 202. Casting Stores
- 203. Rolled Stock Stores
- 204. Drop Forging Stores

Finished Stores
- 400. Manufactured Stock Stores
- 401. Contract Stores
- 402. Repair Stock Stores
- 403. Consigned Stock-branches

- 632. Second-hand Stores

Perhaps the greatest value in connection with inventory control is the fact that it is the only means by which a proper production control and costs can be established, and in such a way as to give credit to the departments for the work which they have done. For instance, take an institution running a large plant and having in connection with it a foundry of any kind. Base metal stores, such as pig iron or brass, copper, and spelter, are used as materials to supply a foundry.

In order to get costs on the foundry, the work of the foundry must be closed out into an inventory of some kind, and this inventory must necessarily be a casting stores, which comes under a classification of parts stores, as in such instances these castings are usually made for a product that is made in the machine-shops of the plant, but in a foundry doing nothing but foundry work such stores would be considered in the same class as finished stores.

In the case of a large plant operating its own casting foundries and brass rolling mills, these casting stores would be drawn into the rolling mills and the operations of the rolling mills would be closed out into costs of the various kinds and sizes of metals rolled, to be charged into an inventory of what might be termed "Fabricated Metal Stores." Or again, in the case of a factory running a drop forging plant, to get the costs on the drop forgings made in the drop forging shops the costs would have to be closed out into an inventory, which would constitute "Drop Forging Stores," which would naturally come under a classification of parts stores where they were made for a product manufactured in other parts of the plant. There will be, of course, some intermediate steps, as shown in the classification, such as "Rolled Stock Stores," which will be partially finished material in the mills rolled waiting for specifications. This might apply to mills rolling brass or mills rolling special steel and iron rod; then, of course, the usual parts stores, which are partially finished materials in any manufacturing department, thus giving a means for crediting these departments with all the work done but which is not ready for sale, and the putting of it under an inventory control, which in turn constitutes a foundation for production control. Therefore, the first thing of importance in connection with inventory control after fixed assets, is that of storeskeeping.

A brief review of just what constitutes storeskeeping is of assistance in laying a foundation for organizing a storeskeeping system.

I. Merchandise Stores

Merchandise stores should cover anything in the shape of materials which might be considered as merchandise, and which are in a salable condition. Merchandise stores, therefore, would cover the purchase

of any and all kinds of materials and supplies outside of tools. This is divided into several kinds of stores, as follows, for inventory control and valuation purposes, made necessary in most instances by the fact that some classes of merchandise stores are subject to quick and rapid market fluctuations and must be under better control than others.

1. General Stores. This should include any and all kinds of materials and supplies used for production but not for construction work, where purchase is made direct for such work. Any unused construction materials, however, should go back into general stores when a job of this kind is completed. General stores should, however, include any and all kinds of equipment, furniture, fittings, etc., as bought, which are to be distributed to the factory through a betterment order. In connection with factory supplies, such as oils, waste, brooms, and the many other items of this character that are used in the operation of a plant, or in connection with office supplies, such as stationery, pencils, inks, pens, pins, etc., arrangements should be made with the storeskeeper to furnish these on a weekly or monthly basis. That is, the storeskeeper should have an order clerk whose business should be to go around once a week or once a month in the various departments using such materials and note the materials needed for their week's or month's supply. This gives just as good an inventory control as any other method and eliminates a tremendous amount of detail in the handling of such items.

2. Base Metal Stores. This is a stores that should be separated from any and all other classes of merchandise stores, as it is on this class of stores that market fluctuations are watched more closely than any other kind. These stores should include any and all kinds of base metal, such as pig iron, pig lead, copper, spelter, nickel, lead, aluminum, etc., and any storeskeeping system should provide means for getting a complete classification of all of these things by quality, alloys, etc., as well as by quantities.

3. Scrap Stores. This is another class of stores which should be kept separate because in all plants using scrap as a mixture for iron, brass, etc., they are using a material which is subject to quick variations in the market prices and consequently needs to be kept under closer control. This scrap stores should include any and all kinds of scrap, such as scrap iron, scrap steel, scrap brass, German silver, nickel, etc. It should be understood, however, that these stores include only such metals or materials as are to be used by a factory itself for manufacturing requirements. Any and all other scrap materials would go into salvage stores for either sale or reclamation.

4. Fabricated Metal Stores. This is a stores account that should be set up for all such plants as have rolling mills of their own and that roll their own metal stocks, such as sheet-iron rod and wire, or sheet-brass rod and wire, as this is the stores into which all costs of production for operating such mills are to be closed out into an inventory. In other words, fabricated metal stores is to any rolling mills what casting stores are to a foundry or what drop forging stores are to a drop forging shop, all of which are a control of costs and inventory.

5. Tool Stores. Tools constitute one of the most expensive parts of any plant's operation, inasmuch as tools are purely an expense and any economies that can be effected in the use and protection of tools are a direct saving in overhead cost. Therefore, it becomes almost necessary to set up a tool stores under the direction of a tool department, and by tool stores is meant such tools as are ready for use. In other words, any form of tool that can be requisitioned out of tool stores and immediately put to use is a part of tool stores, but any materials or items which must be processed in order to make a tool can only be drawn against an order number. Therefore, materials bought for tool-making belong to general stores, from which they must be drawn, charged to the order number for doing the work, and then made into the tools required, the costs closed out and tool stores inventory charged.

In a plant of any size the organization should be such as to have all tool cribs throughout the plant under the direction of tool stores and for this reason, the tool storeskeeper should assume the responsibility of seeing that all processing departments are kept supplied with tools. Therefore,

when tools are drawn out of tool stores and put into a crib they are immediately charged up to the expense of the department drawing them. The use of these tools from that time on is simply governed by a crib slip for drawing the tools out of the crib into usage of some kind. If an inventory stock of tools is kept in the crib it means a continual making out of requisitions for each individual item. To avoid this, tools and tool supplies of all kinds should be furnished cribs on a weekly or monthly basis. That is, a man from the tool stores should visit the crib every week or so, check up the stock and then deliver to the crib the tools needed for a week's or a month's supply, thus giving an inventory control of tools and at the same time minimizing the detail of making out the expense charges. In other words, tool stores in conjunction with a chain of cribs, constitute a complete inventory of expense for the control of all tools.

6. Salvage and Reclamation Stores. Any factory should put into a common stores account any and all materials, scrap, junk, etc., that are apparently of no further use in so far as the condition in which they are collected is concerned, but some portions of which, however, may be subject to reclamation and thus be made useful or salable. This should also include all general scrap such as steel and iron chips and borings and miscellaneous items of this character that are to be sold, or all mixed scrap and iron chips, etc., that must go through a reclamation process before it can be used or sold. When possible, the reclamation department should do this work, should be charged with all the expense of doing it, and should be credited with the value of the materials sold or put back into other stores for usage. The importance of a stores of this character cannot be overestimated, as the amount of salvaging that can be done is tremendous if properly handled.

The writer has seen as a very first step 200 hammer heads salvaged by having new handles supplied in the salvage department. In one instance, he saw over twenty-five hundred dollars worth of high-speed steel tools salvaged out of one small junk heap of cutters.

II. Parts Stores

For reasons of production control, and to make possible the use of a minimum set-up quantity method, parts stores are established in order that costs and inventory values may be obtained on individual pieces and also that production control can be applied by way of schedules and avert the danger of accumulating a large Work in Process inventory. In other words, to get intensified production, it is often necessary to run through large quantities of small pieces and subsequently withdraw them from parts stores for assembling purposes in much smaller quantities. t is also necessary to have parts stores into which the costs of production orders may be closed out as an inventory, thus providing a means for issuing production orders for each individual piece or part that may be made, and so obtain the cost on it and a consequent control of costs.

As a result of this sort of inventory control, the efforts of the production department are made absolutely effective, without which they could only work on some general scheme without any knowledge of just where work in process stood. Consequently, a stores of this character should come under a production or planning department and this naturally divides itself up into a classification as previously exhibited and must always be considered from three points of view:

1. As a means for manufacturing on a quantity basis items that can be subsequently drawn out to any one of several different orders.
2. As a basis for closing out costs into parts stores, so as to obtain a direct cost on assembly work. All stores of this kind are under the control of that portion of the manufacturing department making them, as they become a part of any production control scheme that may be introduced.
3. As a means for obtaining production control and a monthly or regular accounting period credit for production to the processing departments.

Parts stores for these reasons may be divided or classified as follows:

1. Stock Parts. These are the regular parts of the units manufactured for sale, consisting not only of individual pieces but sometimes of subassemblies which are run through a schedule in quantities, costed out, and put into inventories. The stores records for such parts will be by a classification of pieces, parts, and units manufactured.

2. Overproduced Parts. Where a concern takes large contracts for the manufacture of a unit consisting of several pieces, there is nearly always an overproduction of some of these pieces. To clear this and get a sales analysis it is necessary for the entire contract to be closed out and work in process cleared from the factory by charging sales with all of the completed parts and crediting work in process and charging overproduced parts with all pieces in excess of the order. By this method a sales cost analysis will represent exactly what was shipped and profits will be reflected accordingly. These overproduced parts stores may be checked up frequently and as soon as it is determined that an item will not be required for any other order, overproduced parts should be credited at the inventory value and salvage and reclamation stores charged at a salvage price. Therefore, overproduced parts would take a direct profit and loss, which can be closed out into profit and loss general at some stated periods.[1]

3. Casting Stores. Casting stores will be the inventory into which all operations of a foundry are closed, thus forming a means for crediting the foundry by way of costs for all work done, including the foundry's own overheads, and charging them into an inventory from which they may be withdrawn either for other manufacturing requirements or to be sold. Handling them on this basis fulfils two requirements:

1. It enables the accounting department to close out the costs of the foundry and give them a credit for all the output they made, establishing an inventory of casting stores, from which castings may be drawn either for the manufacturing requirements of the plant itself, or to be sold outside.
2. It gives the production department an opportunity to set up an independent schedule on the foundry so that they can make a combination for their own or outside requirements, or can run through large quantities of small parts according to some other schedule requirements.

[1] The next two stores, casting stores, and drop forging stores, are not strictly speaking parts stores, but as nearly all methods of handling production on a schedule basis must be handled by a production department, and as stores of this character would come from the schedules issued by the production department, it usually seems best to classify these stores under parts stores.

4. Drop Forging Stores. What has been said of casting stores applies in exactly the same way to drop forging stores.

III. Finished Stores

1. Stock Stores. This stock stores includes a classification of all of the completed items made by a company itself for sale; that is, finished stores, will consist of any and all goods that are cased ready for shipment, or are finished in so far as the factory is concerned and are ready for shipment. In other words, it is the account that clears work in process in the factory of all work that is finished, so as to give a true statement on any monthly balance of the actual work in process. There may be times when it is necessary to divide this up into certain finished stores made by different departments where such departments manufacture a complete product in themselves.

2. Contract Stores. This would include any and all finished stores made for other concerns on a contract basis, which were not regularly made by the company making them, and forms a means, the same as stock stores does, for clearing the factory of work in process and putting finished work of this character into an inventory which can be credited for sales analysis purposes.

3. Repair Stock Stores. In many plants manufacturing certain kinds of machinery large stocks of repair parts are carried, and it is necessary to have repair stock parts under a very close inventory control, not only from a service point of view but from an obsolescence point of view as well. Therefore, it is always deemed advisable to set up an independent inventory control of such items.

4. "Consigned Stock-Branches" Stores.

This will include any and all stock carried in branch stores as an inventory, but which is subject to sale. Any of the previous stores under finished stores would be credited when shipment is made to branch warehouses and the consigned stock in such branch houses charged to this account, a subsidiary ledger being kept with each branch.

5. Second-hand Stores. It is necessary in most concerns, especially in large concerns, to set up a second-hand stores which will include all the machinery, tools, etc., taken from the plant which for the moment are of no further use, but which may at some future date be put to use or sold. This will include any and all kinds of machinery, tools, or equipment, but only when they are in usable condition or salable shape. When such items are not usable they must clear through a salvage and reclamation stores before being put into second-hand stores. For instance, when belting is taken from the plant, the belts should be inspected and put into shape and that portion or department of the plant from which they came should be credited accordingly. The work of reclamation or repair is then to be added to this and they are to be placed in stores at some stated value, including the cost of reclamation, and then when returned or sold are credited at this figure and charged to their use accordingly.

VI

The foregoing classification of fixed assets for stores is broad in its interpretation but, of course, in actual application will require a great deal of study for classification and index purposes according to the product made, which it would be impossible to provide in an article of this character. The classification, however, of fundamentals set forth in connection with inventory control has been worked time and time again by the writer and at least can claim the merit of good practice.

It is to be remembered in preparing a plant register that on account of insurance, and for purposes of departmental depreciation, this register should be indexed in two ways: (1) By the classifications given above, and (2) this classification will then be spread over the buildings by departments in the buildings, so that absolutely correct figures for departmental insurance and depreciation purposes can be established. Therefore, the plant register cards should be so prepared as to carry the repairs and depreciation on any individual group or item when necessary to do so.

The first step necessary to provide for proper depreciation is to get the plant register in such shape that it will show the value of the different classifications of equipment in each department and then apply as a depreciation figure the aggregate of the whole of these different classifications. The plant orders and plant register will from that time on give any increase or decrease in these valuations according to new installations or other changes that may be made in the equipment of a department.

As soon as this departmentalization has been made, prorating sheets for each month's charges against a department for depreciation should be made and used in connection with whatever methods of distribution are employed as master or departmental control sheets.

Any and all machinery, motors, etc., placed in salvage stores and out of use should have depreciation continued on it at 50 per cent of what the depreciation rate was when in active use. This is to cover depreciation due to natural decay and obsolescence.

In "Unified Accounting Methods," a certain method for classifying or indexing stores was presented which was adapted to a small or medium-size plant, and since this book was written an entirely new method of procedure was evolved for classifying and index-

ing stores, which is indicated in the following and is presented here because it has proved to be a means for eliminating a large amount of clerical work and at the same time intensifying accuracy. For instance, general stores is first divided into the following classes:

CLASS 1

Office Supplies
- Advertising Matter

Appliances
- Typewriters
- Accounting Machines, etc.

Furniture
- Desks
- Chairs
- Filing Cabinets

Paper Stocks
- Cut and Uncut Paper
- Paper Boxes

Stationery
- Printed Forms
- Record Cards
- Mucilage
- Glue
- Pencils
- Pens

Drafting-room Supplies
- Drawing Paper
- Tracing Cloth
- Blue-print Paper
- Draftsmen's Erasers and Pencils

CLASS 2

Building Supplies
- Builders' Hardware
- Hinges
- Catches
- Nails
- Wood Screws

Glaziers' and Painters' Supplies
- Glass
- Turpentine
- Paints
- Colors
- Lumber, Rough and Finished
- Mouldings

Masons' Supplies
- Building Brick
- Cement
- Asphalt

Structural Iron and Steel
- Beams
- Panels
- Angles
- Roofing Tin
- Gutter Pipes

CLASS 3

Plumbing and Heating Supplies
- Drainage and Sewerage Systems
- Tile Pipe
- Iron Soil Pipe
- Lead Pipe
- Equipment, as Wash Trays, Closet Bowls, etc.
- Couplings
- Reducers
- Clamps
- Bends
- Y's
- T's

Packings
- Metal
- Leather
- Rubber
- Asbestos
- Fiber
- Cotton
- Piping
- Valves

CLASS 4

Electrical Supplies
- Conduit and Fittings
- Inside and Outside Fittings
- Outside Electrical Construction Supplies
- Signal and Call Supplies, as Bells, Telephones, etc.
- Electric Wires
- Cables

CLASS 5

- Acids
- Chemicals
- Compounds
- Containers
- Crucibles
- Fire Brick
- Fuel Oil
- Coal
- Wood
- Charcoal
- Sawdust
- Lubricants

Cutting Compounds
Factory Chairs
Machine Bolts
Machine Screws
Washers
Nuts
Cotter Pins
Shooks
Cooperage Supplies

CLASS 6

All tool steels, bars and sheets, machine steel, bars, and sheets
Black and Galvanized Sheets
Drill Rod

CLASS 7

Patterns
Gauges
Small and Perishable Tools
Drills
Reamers
Wrenches
Hammers, etc.

CLASS 8

Barn Supplies
Wagons
Harnesses

Garage Supplies
Automobiles
Trucks

Plant Protection Supplies
Rope
Cordage
Slings
Cables
Chains
Fiber Sheets
Rubber Sheets
Leather Gloves
Aprons—Leather and Rubber
Belting—Leather and Canvas
Welfare and Industrial Supplies
Hospital Supplies
Chemistry and Test Supplies

These classes are arranged in such a way as to cover three requirements:

1. A classification for the purpose of organizing the buyers.
2. A classification for the purpose of organizing clerical work and stores recording.
3. A means for identifying each and every requisition drawing material with the two former.

For instance, office supplies, appliances, furniture, paper stocks, station-

SIZE, GAUGE AND REMARKS — UNIT FOR PRICING

LOCATION OF STOCK: AISLE NO. BIN NO. MAX. QUAN. MIN. QUAN.

When Balance in Stores Reaches Minimum, Production Dept. will issue order for more. Balance in Stores must be shown at time each entry is made.
POST ONLY AFTER ACTUAL RECEIPT OR DELIVERY.

ON ORDER		RECEIVED IN STORES			BALANCE ON ORDER	ISSUED			BALANCE IN STORES
Order No.	Quantity	Order No.	Quantity	Total Cost		Order No.	Quantity	Unit Price	

MODEL NAME OF PART OR ARTICLE PART NO.

Figure 3—Stores Card

ery and drafting-room supplies might be covered by one man, who would buy all the goods for these classifications. Class 2 would be covered by another buyer; Class 3 by another, and so on, according to the size of the business and the amount of purchasing done. The actual indexing of the stores in the operating files of the stores recording department would be alphabetical, with a class key.

VII

The writer has tried and experimented with nearly every form and method of storeskeeping that has been known, with the result that he has concentrated all of his storeskeeping down to one form herewith illustrated for the keeping of nearly all kinds of stores, and has found that the most successful way to use this card is in a visible card index, of which there are some two or three different makes on the market. (See Figure 3, page 213.)

This card gives all the information necessary to control inventories and to ascertain valuation, and further gives location of all materials, aisle number, bin number, maximum quantity, etc., and is a form that is highly recommended for anybody who wishes to get a storeskeeping system that can be rapidly handled with a minimum number of clerks and at the same time be kept posted to date, and from which distributions by way of requisitions can be made easily and rapidly.

PRICE CHANGES AND BUSINESS PROSPECTS

BY LEONARD P. AYRES *

DURING the five years from the summer of 1915 to that of 1920 the cost of living in American cities doubled. In the following year it dropped rapidly, so that by the summer of 1921 much of the increase of the preceding five years had been wiped out.

The data used are those of the National Industrial Conference Board which publishes each month the latest figures of its index number for the cost of living. In compiling this number it is recognized that the different necessities of life are of varying relative importance in the family budget and weights are assigned to them on the basis of extensive studies that have been made of family expenses. The following weights show how a typical family would spend $1,000 if this sum were normally distributed for the several necessities of life.

Budget Item	Relative Importance in Family Budget
Food..............	$431
Shelter............	177
Clothing...........	132
Fuel...............	37
Light..............	19
Sundries...........	204
Total............	$1,000

Table 1

Several of these items have been combined so as to leave only four groups. The aggregate cost of these items in 1914 is taken as 100 and the subsequent changes since that date are shown by the increases above that initial figure. The results are shown in the figures of Table 2, giving cost of living from 1914, to May 1921:

The figures for the cost of living are, of course, retail figures, and if we eliminate rent from them and supplement them by such other series of retail prices as are available in government reports, we may construct an index number to show the fluctuations in the general level of retail prices over this same period. This has been done and the results offer a means by

Budget Item	1914	End of 1915	End of 1916	End of 1917	End of 1918	End of 1919	July 1920	May 1921
Rent.......	18	18	18	19	21	25	28	30
Clothing....	13	15	17	22	25	32	35	22
Food.......	43	45	55	66	78	83	94	66
All other....	26	27	30	35	40	45	48	48
Total.....	100	105	120	142	164	185	205	166

Table 2

* Vice-President of the Cleveland Trust Company, Cleveland, Ohio.

which we can compare these retail prices with the index number for wholesale prices that is published each month by the United States Bureau of Labor Statistics. The results are set forth in Figure 1 in order to note the differences between the changes in the price levels of the retail and the wholesale series.

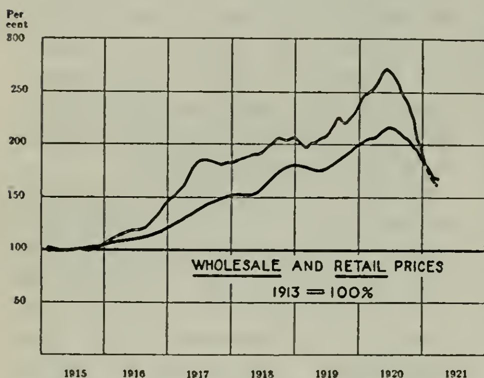

Figure 1. Wholesale and Retail Prices From 1915 to 1921

A noteworthy difference between the two curves in Figure 1 is that the line representing the wholesale prices runs above that for retail prices during nearly the entire six-year period. This does not mean that the wholesale prices were actually higher than the retail, but rather that the wholesale prices rose further in proportion to the level from which they started. Their relative increase was greater. This fact illustrates an important principle with regard to price movements, which is that changes in wholesale prices always tend to be more violent than those in retail prices.

Another noteworthy difference between the two curves is that changes in direction from rising to falling, or vice versa, always occur some months earlier in the wholesale curve than in that for commodities at retail. Thus in 1917, just after America entered the war, the wholesale prices stopped rising and ran along nearly level for some time before again beginning to go up. After a lag of nearly six months the retail prices did the same thing. In 1918 the wholesale prices anticipated the armistice, stopped rising in September, and began to fall, but it was not until January that the retail prices followed. When they began to go up again in the spring of 1919 the retail prices still lagged behind. Again in 1920 the same sequence may be noted, for the wholesale prices reached their peak and started down in May, but the retail prices did not reach theirs until July.

During the past year there has been an almost unbroken chorus of complaint in our newspapers and our legislatures because retail prices did not fall so rapidly as wholesale prices. The cause for the lead of the one and the lag of the other is to be found in economic law rather than in personal guilt, and it would be well for those who make the complaints to note that the retail prices were slower and more moderate than the wholesale prices in their increases just as they are now falling with greater deliberation.

The cause for this difference may be easily illustrated. Suppose that the reader were a dealer in wheat at wholesale and also ran a bakery and sold bread over the counter. If a cablegram came telling him of an unexpected crop failure in the Argentine, he well knows that the wholesale price of wheat would begin to move upwards within the next few minutes. He would not, however, on that day increase the price of the bread that he sold over the counter, for this bread would be made from the flour that had been bought at the old, low levels. Neither would he at once increase the wages of his employees, and least of all would he expect his landlord to

raise the rent of the bakery because of the receipt of the news that resulted in the higher wholesale price.

On the basis of considerations more or less similar to those that have been suggested we may lay down six general rules with regard to price movements, as follows:

1. Wholesale prices move first and farthest.
2. Retail prices move more slowly and less violently.
3. Wage levels change more slowly than prices.
4. Manufactured articles, having a high labor content, change their price levels more slowly than do raw materials, having a low labor content.
5. Salaries change more slowly than wages.
6. Rents change more slowly than prices, wages, or salaries.

II

While prices in this country were moving in the ways that have been noted, changes of a much more extensive sort were taking place in most of the other countries of the world. Figure 2 shows the course of the index numbers for wholesale prices in Italy, France, England, and the United States. In each case the price level in

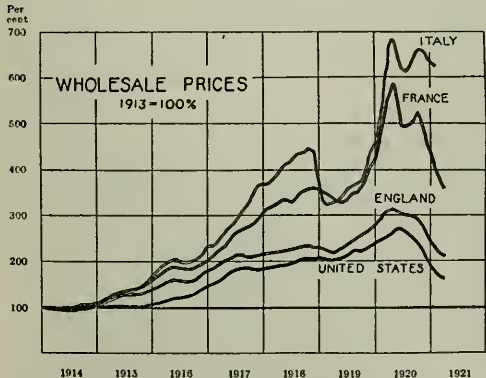

FIGURE 2. WHOLESALE PRICES IN FOUR COUNTRIES 1914 TO 1921

1913 is taken as 100 and the subsequent changes are expressed in percentage terms from that level.

The feature of the diagram that at once attracts attention of the reader is that each major or minor fluctuation in one curve is accompanied by some change of similar sort in each of the other curves. This reflects the fundamentally important fact that nations are no longer economically independent. In our modern industrial age the welfare of each important nation is affected in greater or less measure by the prosperity or poverty of each other nation.

The second outstanding feature of the diagram lies in the clearness with which it shows the two great price movements of the war period and the post-war period. During the war there was a very great rise in the general price level all over the world. When the armistice came, in 1918, prices fell everywhere and it was generally thought that they would continue to fall until they gradually went back to something like their old levels.

Then came the very great price increase of 1919 and 1920 which appears not to have been foreseen by anybody anywhere, and it has been followed by the most rapid and continuous collapse of prices that economic history records.

Still another noteworthy condition that the diagram emphasizes is the striking difference between the relatively moderate price increases in this country and the enormous increases in France and Italy. This largely represents the differences in the relative soundness of the currencies in which the prices are paid. This country is on a gold basis. In England there is every reason to believe that a genuine return to a gold basis will come before very long. In France and in Italy no such reasonable prospect exists

and there is grave reason to doubt whether the currencies of these nations, and of most of the others that were participants in the war, on either side, can be restored to their old values.

Dr. Ralph G. Hurlin, who is the statistician of the Russell Sage Foundation in New York City, has carried back the index number for wholesale prices in this country until we now have available the figures for a period of 110 years. Figure 3 shows how prices have varied during these 11 decades. As in the cases of the previous diagrams, it is constructed so as to show the prices of 1913 and 1914 as being equal to 100, and those of other years as being proportionately greater or less.

Figure 3 shows that the recent great rise in prices is the third, of substantially the same amount, that America has experienced. All three have come in times of great wars. The first took place during the war of 1812, which was in reality this country's participation in the Napoleonic wars. The second came during the Civil War, and this most recent one during the World War.

If the reader will examine carefully the contour of the curve of prices during this period of 110 years he will find that it is a condensed version of the economic history of the country. Each important change in tariff and in national financial policy is reflected, together with the different periods of prosperity and depression, and the several wars.

The most significant fact revealed by this diagram, however, is that each of the two previous great price increases has been followed by a 30-year period of irregularly falling prices, and a 20-year period of generally rising prices. At the present time prices are rapidly falling and it is most important for the business man to consider whether or not it is probable that this is the beginning of a long term of falling prices and, if so, what this means for business.

There is much evidence to indicate

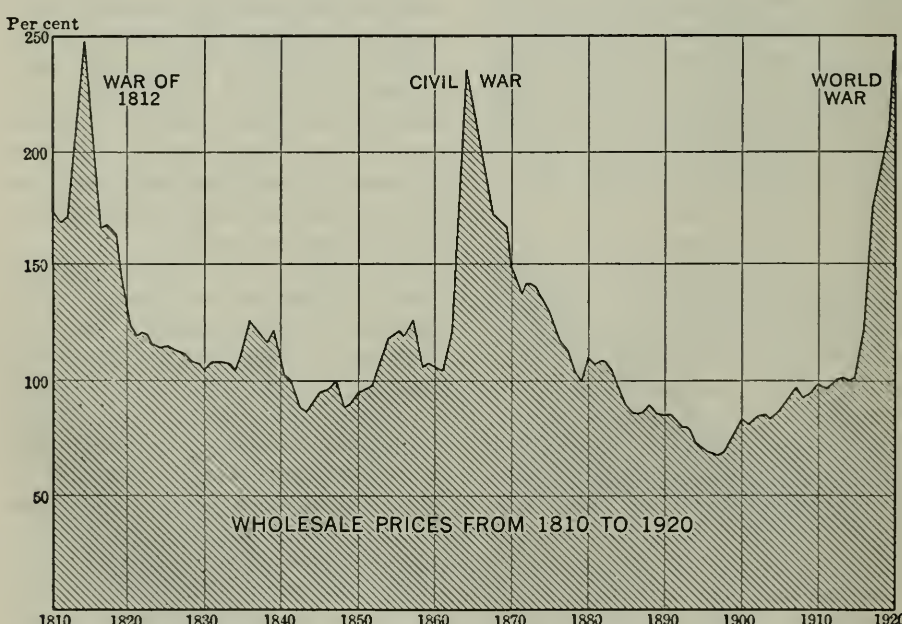

Figure 3. Wholesale Prices in the United States For 110 Years

that the general trend of prices will be irregularly downward for a period of years to come, just as it was after the two earlier great increases. A reason why one may expect this lies in the very fact that prices are and have been high. Another is to be found in the world's decreasing production of gold. A third lies in the enormous losses of lives and property in the past few years, with the accompanying disorganization of the world's industrial producing power. A fourth is in the depreciated currencies of the world which the stronger nations will endeavor by every means in their power to stabilize and make more valuable.

As these countries regain their industrial productivity they will, one by one, attempt to establish an adequate gold basis for their paper currencies. It is highly probable that several of them will find it impossible to re-establish their money at its old value as compared with our dollars, but even if they adopt some new ratio of worth they must somewhere obtain more gold as a basis for doing it.

There is only one place from which they can get that gold and that is from this country which now has a large part of the world's currency gold. They will try to secure it by sending to this country their commodities and selling them here, and each time that this happens on any large scale, prices here will tend to fall.

For all these reasons it seems probable that we are entering on a long period of falling prices and it is well for us to consider what that means to us.

III

In a long period of falling prices any regular payment of a fixed sum, like the annual instalment on a mortgage, is harder to make each year than it was the year before. The rent is harder to pay and the taxes are more difficult to meet. If one is a farmer and pays $200 a year on a mortgage it takes only 100 bushels of wheat to meet the payment when the price is $2 a bushel, but it takes 200 bushels when the price drops to $1 a bushel.

If one is a manufacturer and buys raw material to make into a finished product, the value of the material shrinks while being made up and one must sell at less than one expected to or take a smaller profit than one had intended. The rent and the taxes of the factory are in reality paid in units of the articles manufactured and each year it takes more and more of these articles to pay them.

In a long period of rising prices all these conditions are reversed. The annual payment is each year easier to make; the rent is easier to pay; the taxes are easier to meet. The manufacturer buys his raw material and the longer he keeps it the more it is worth. He makes not only the profit that he expected to, but something more as well. In periods of very rapid price increase, such as those that we have just passed through, he may find it more profitable to sell his material without making it up and in this way large profits come to middlemen through buying goods and reselling them at higher figures.

It is in this sort of an industrial and commercial world that America's business men have lived and worked during the rapidly rising prices of the past 20 to 25 years. Optimism has become the business religion. The man who had faith in the future, and nerve, and imagination, and was willing to take chances, was the man who received society's great rewards.

Our fathers lived in a different business world. Most of them had their active careers in the long 30-year period of falling prices following the

Civil War. In thrifty New England during that time it came to be considered almost a disgrace to have a mortgage on one's farm because ample experience had shown that the signing of the mortgage was often the first move towards the poorhouse. Caution, and thrift, and careful attention to details, rather than bold enterprise, were the essentials for success.

It is often deplored that there is but little sympathy between young men and old men in discussions about business. It cannot be otherwise. They have lived in two different business worlds and they talk different languages and judge by opposing standards.

It was during the long period of falling prices that people began to refer resentfully to the wealthy as "bloated bondholders." The bond pays its owner each year a fixed number of dollars and, when these will buy more and more things as each year passes, the possessor of the bond grows increasingly wealthy through no effort of his own. The man who buys a bond buys money in the future.

During recent years bondholders have not been popularly referred to as "bloated" because it came to be realized that their fixed incomes were worth less and less each year. There has grown up instead the phrase "captains of industry," because the public realized that it was the industrial manufacturer, and the stockholder in the industry, who were reaping the large profits. The man who buys stocks in industrial concerns is really buying commodities in the future.

In long periods of rising prices industrial stocks profit at the expense of the corresponding bonds. The bond is then expensive for the owner but profitable for the issuer, while the stocks are profitable for the owner and expensive for the issuer. In periods of falling prices all this is reversed. The bondholder profits at the expense of the stockholder. The bond is an expensive liability for the company that puts it out but a profitable investment for the person who holds it.

As we enter upon this period of declining prices business concerns should endeavor to pay off their indebtedness before the dollar increases still more in its purchasing power. Those which still retain earnings accumulated during the recent period of high profits should conserve them and will greatly profit from having them, while those which distributed in dividends their extraordinary earnings, made during the period of rising prices, must expect to exercise the greatest efforts now to make up for their past generosity.

Borrowing on short maturities is particularly advisable while interest rates remain high. As prices fall money rates will eventually decline also, and then those who have borrowed on a short term basis will be able to renew their loans or to refund them at lower rates than could be obtained now.

IV

A careful study of the course of wages during the past 100 years has been made by the same Dr. Ralph G. Hurlin who compiled the data on wholesale prices. The results of this study are presented in Figure 4, on which there are two lines representing the course of the weekly wages of artisans and of laborers during the past century.

The upper line shows the average weekly wages each year of five sorts of artisans: carpenters, house painters, machinists, blacksmiths, and compositors. The lower line shows the weekly wages of adult, white, male, unskilled laborers in industrial establishments.

One hundred years ago, in 1820, the average weekly wage of the artisans was about $7. This rose steadily during the next 40 years until it was about $10 a week in 1860, just before the outbreak of the Civil War. During the course of that struggle these wages rose from the $10 level to $15 and then kept on rising until 1869, or four years after the close of the war, when they passed $17. Then came 10 years of

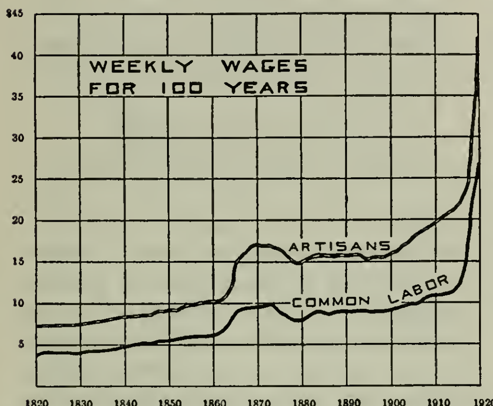

Figure 4. Weekly Wages of Artisans and Laborers For 100 Years

decline until 1879 when they were $14.74. A slight recovery lifted them just above $15 where they stayed for 20 years, or until 1900. They then rose for 15 years, or until 1915, when they amounted to $21.38, and shot up for five years during the World War, and for two years after its close, to an average of $42 in 1920.

During this entire period of 100 years the course of the wages of common labor ran along nearly parallel to that of the artisans and throughout the century their relationship to each other is such that the artisan wage is almost always about 180 per cent of the common labor wage.

As compared with the changes in wholesale prices, the variations in wages came tardily and moderately, conforming in these respects to the general economic laws that were set forth earlier in this paper. This, however, is not a sufficient explanation of the marked differences between the great changes in prices in the half century following the Civil War, and the comparatively moderate changes in wages. From 1870 to 1896 prices fell 55 per cent while artisans' wages declined only 9 per cent. From that date to 1915 wholesale prices rose 51 per cent and wages only 38 per cent.

It is worth while to consider how such great differences were possible, since in large measure the workers that produce the commodities constitute the consuming public that purchases them. This means that there must always be a general balance between wages and prices and yet the figures make it look as though such a balance had not existed.

Most of the explanation is to be found in the revolutionary changes that took place in industry during that half century and greatly increased its productive capacity. The Civil War ushered in the modern era of great industries. Before that time there were few large factories in the modern sense of the term and much of manufacturing work was still done in the homes of the people.

In New England the reader may still see the additions to the old farmhouses that were built in the Civil War for the purpose of sheltering the members of the family and the neighbors while they made shoes and uniforms for the soldiers. The material was cut up in the shop in the village but the making was done in the homes. Large factories, as we know them, hardly existed.

The Civil War brought the beginnings of quantity production. It was followed by important inventions and the introduction of large units of power.

Then came factories, automatic and semiautomatic machinery, electricity, and high-speed steel. These advances in production enabled each worker to produce each day more than he had formerly and, since his productivity was greater, his wages did not need to decline in proportion to the prices of commodities. His share in the output increased; and his standard of living rose.

The question as to whether or not we are to see wages shrink far less than prices in the next few years is largely a question of what happens to the efficiency and productivity of industry. If improvements in processes and in management can largely increase the output per worker per day, then wages will not have to decline so far as prices. If, on the other hand, the output does not come up, then wages cannot permanently retain the gains they have made.

V

Figure 5 shows the course of the average monthly prices of common stocks of 25 industrial corporations over the past 22 years. The line shows that these prices moved in a series of great waves, or cycles, each of which lasted several years. When the prices were high we were in periods of prosperity and the profits of these corporations were large. When they fell it was because we were entering periods of business depression, with accompanying low profits. The 25 industrial common stocks entering into this average are the following:

Allis-Chalmers Manufacturing Company
American Agricultural Chemical Company
American Beet Sugar Company
American Car and Foundry Company
American Cotton Oil Company
American Hide and Leather Company
American Linseed Company
American Locomotive Company
American Sugar Refining Company
American Woolen Company
Central Leather Company
Corn Products Refining Company
International Paper Company
National Biscuit Company
National Enameling and Stamping Company
National Lead Company
New York Air Brake Company
Pressed Steel Car Company
Railway Steel-Spring Company
Republic Iron and Steel Company
Sloss-Sheffield Steel and Iron Company
United States Cast Iron Pipe and Foundry Company
United States Rubber Company
United States Steel Corporation
Virginia-Carolina Chemical Company

The prices of industrial stocks constitute one of the most reliable indicators of the ebb and flow of business prosperity. Their market values are recorded every day in the stock market so that information concerning them is always up to date and always trustworthy. They furnish a most sensitive barometer of business conditions because their movement usually precedes that of most other available records of commercial and industrial activity. They begin to go down while reports of business activity are still optimistic and they usually start up again before other signs of the coming prosperity which they foretell are apparent.

An inspection of Figure 5 shows two salient characteristics. The first is the one that has already been mentioned, that the average price of these stocks has advanced irregularly and in a series of wave-like major fluctuations, broken by numerous minor fluctuations. The average monthly prices, as shown in graphic form in the diagram, are the averages of the points half-way between the highest quotation for each month over this 22-year

period and the lowest quotation for that same month for each stock.

The second outstanding feature of the diagram is that the line of average values tends to go up as the years pass. The increase was comparatively gradual over the 15-year period from 1900 to the closing of the stock market, on the outbreak of the war in 1914, and very rapid during the six-year period from 1915 through 1920. Over the whole period the general tendency is for each new high point to be higher than the preceding, and for each new low point to be somewhat above the one before.

The reason for this tendency to rise is that these industrial corporations have been growing richer with the passing years and their shares represented increasing real values. They owned more and larger factories and better equipment. They had greater reserves and the actual book value of their securities was increasing. This is well illustrated in the case of the common stock of the United States Steel Corporation which sold for $8.37 in May, 1904, during the latter part of the depression of that year, but only for a short time fell as low as $80 in the severe depression of 1920 and 1921.

In Figure 5 a straight line of dashes has been drawn through the irregular line of prices from 1900 to 1914, and another from 1915 to 1920. These straight lines show the general trend of the increasing values of the stocks. They are drawn by the mathematical method of least squares, and may be defined as being lines that express the general trend or direction of the irregular lines through which they are drawn, more closely than could any other straight lines that might be constructed. In a certain real sense they may be considered as showing the normal average price of these stocks at any given time and the fluctuations above and below these slanting lines show periods of prices that were above or below the normal values.

If we think of these straight trend lines as representing normal prices it becomes a simple matter to construct another diagram, based on the data of the one just considered, and showing this time the amounts by which the average price was above or below the normal price each month during these 22 years. This is done by redrawing

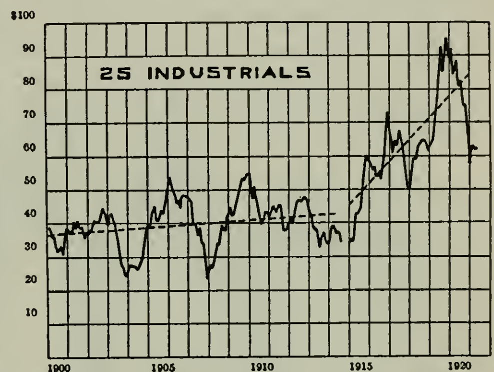

FIGURE 5. AVERAGE MONTHLY PRICES OF 25 INDUSTRIAL COMMON STOCKS FROM 1900 TO 1921. DASHED LINE SHOWS TRENDS

our two straight, slanting trend lines as a continuous horizontal line, and then indicating the fluctuations of the irregular price line above and below it. This is done in Figure 6 which is merely Figure 5 redrawn, as described, by making the two slanted dash lines into one continuous heavy horizontal line which is now the axis of the new diagram. This normal line is indicated on the scale as the zero line and the fluctuations above are in terms of dollars more than normal, while those below are in terms of dollars less than normal.

One qualification should be noted with regard to what has just been stated. This is that the deviations from the normal in 1920 and 1921

have been figured from an imaginary level line instead of from the slanted trend line of Figure 5. This is because it seems certain that the general tendency of these stocks to increase in value at the war-time rate came to a termination at about the beginning of 1920. For this reason a level trend line has been assumed from that point.

In Figure 6 the swings from depression to prosperity and back again are most easily followed. The depression of 1900 was followed by recovery in the next two years. This was succeeded by the crisis of 1903–4 which was followed by the great prosperity of 1905 and 1906. Then came the panic of 1907–8 and the prosperity of 1909 and 1910. The prosperity of 1912 was followed by the depression of 1913–14 which preceded the breaking out of the war. When the market opened again we went into the sudden and great prosperity of 1915 and 1916 which was stimulated by the war orders of Europe. Then followed our own entry into the war in the spring of 1917 with a consequent disturbance of industry reflected by falling security prices. This continued until after the signing of the armistice in the fall of 1918 and gave way to the great wave of industrial prosperity in 1919 which was coincident with the rapid post-war rise in prices.

The descent from these heights of prosperity and the inflated commodity prices was anticipated by the stock market, which broke in November, 1919, and carried security quotations down for more than a year to the low point of December, 1920. From that point there was a sharp but short recovery that brought prices up nearly five points from their lowest records and has maintained them about there during the first four months of 1921.

The extreme fluctuations of the latest periods of prosperity and depression are worth noting. In Figure 6 the high point of 1919 is higher than any previous high point, and the low point of 1920 is lower than that recorded in any earlier depression. These

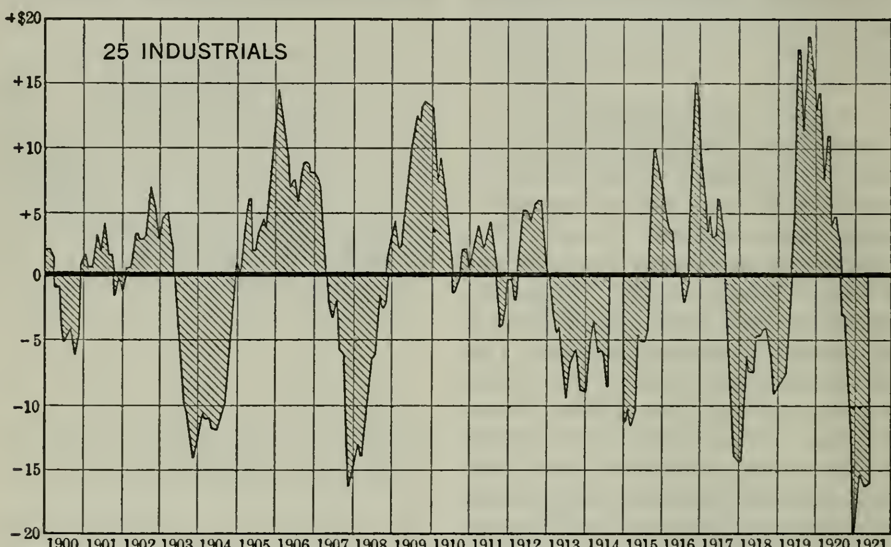

Figure 6. Fluctuations, Above and Below Normal, of Average Monthly Prices of 25 Industrial Common Stocks From 1900 to 1921

extreme swings are in part due to the fact that the average price of the stocks has been increasing over this period of years so that wider fluctuations may reasonably be expected. After every such allowance has been made, however, it remains evident that the extreme industrial activity and prosperity of 1919 were almost without precedent, while the ensuing decline of 1920 was such as has seldom before been equalled even in those extreme periods that we have come to know as crises and panics.

The fact is that we have been passing through a kind of silent panic that has not generally been recognized as such because there have not occurred those spectacular insolvencies of banks and of great industrial corporations that have signalized previous similar periods. This is in part due to the accumulation of resources during the period of war prosperity and, in still greater measure, to the existence of the federal reserve banks, which has imparted elasticity and adaptability to our financial system and prevented an acute credit stringency.

VI

The immediate interpretation of the present situation as shown on the diagram is that some substantial improvement of present conditions cannot be long delayed. There has never been a time when the prices of these stocks have long stayed down at anything like their present relative levels. The reasonable interpretation of the lessons of the past is that substantial improvement may be expected before long and that the rise in the prices of the industrial stocks will be followed shortly by a general improvement in business conditions.

There is another equally apparent, and less cheering thought to be derived from this diagrammatic silhouette representing our recurrent periods of prosperity and depression, profit and loss, activity and unemployment, overproduction and underproduction. This is the realization that when the business recovery comes and runs its course it will almost inevitably overrun its reasonable limit.

In general our periods of prosperity have culminated in bursts of speculation, while the following times of depression have produced insolvencies, idleness, want, and discontent. These extremes are undesirable and they are in the main avoidable. It is intolerable that we should look forward to an indefinite future of these recurring attacks of business and industrial chills and fever.

One great step towards avoiding them has been taken in the adoption of the federal reserve system. Another important preventive will be available when we inaugurate a national system of production statistics currently gathered, and promptly available. A third important step towards avoiding them lies in the use of just such methods for charting our position in the business cycle as have been used here.

Almost the most important single item of knowledge that a business man can have is that which tells him in what part of the business cycle he is at any given time. If business is at about normal it makes a great deal of difference whether it is at normal on the way up, or at normal on the way down. Largely in proportion as the business man knows about this most important matter will he be able to conserve his gains and to guard against losses.

The business man who does not know in what part of the business cycle he is at any given time occupies the position that the farmer would be in if he had a thermometer but no calendar or almanac. Such a farmer would

know perhaps that the weather during the past week had been warm but if this should lead him to mistake the Indian Summer of the autumn for spring time, and to plow and sow with the expectation of gathering a harvest later on, he would be doing what business men do just at the culmination of each period of prosperity.

In proportion as knowledge of business cycles and of the principles of price movements becomes more general the extremes of these fluctuations will tend to be shorter and lower, and the times of transition will tend to come and go less rapidly.

As an illustration of the similarity between the recurring ups and downs of the business cycles and the proces-

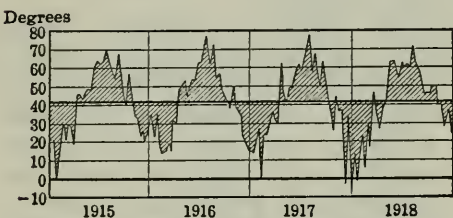

Figure 7. Lowest Recorded Temperature Each 10 Days in Cleveland For Four Years

sion of the seasons of the year, Figure 7 has been constructed. It shows for the city of Cleveland the minimum temperature each 10 days during the four years from 1915 through 1918. The general resemblance between it and the preceding diagram is marked. It shows that the progress from the warm weather of summer to the cold days of winter, or vice versa, is sometimes regular and even, and in other years most irregular. It shows that some highs are higher than those of previous years and some lows distinctly lower than the previous experiences would lead one to expect.

In urging that more extended use be made of such data as those on which Figure 6 is based it may be suggested that a drawing such as that could be improved by constructing two shaded strips across it, one above the normal line at about the plus 10 level, and the other below it at about the minus 10 level.

The upper strip could be lettered "Zone for Caution" for it is at these times of culminating prosperity that the business man most needs to exercise care. When orders are plentiful and profits large, when prices are high and selling is easy, the time has come to be careful. That is the time to consolidate the gains that have been made, to reduce inventories, to collect accounts, to avoid new construction, and to prepare to build up bank credits.

The lower strip might be lettered "Zone for Courage" because it is when the prices of securities are lowest, and business prospects bluest, that courage becomes most valuable. It is then that the man who has hope, and faith, and the courage of his convictions can start his journey along the path that leads to prosperity, to success, and perhaps to fortune.

ESTIMATED BALANCE SHEET AND ESTIMATED STATEMENT OF PROFIT AND LOSS

BY JAMES O. McKINSEY*

BUSINESS management can be exercised in a rational manner only when it is based on accurate and comprehensive information with reference to the operations of the business which are to be administered. Not only must information be available, but it should be in the form in which it will be the most serviceable to the business manager. A large part of the information used by the business executive is in the form of statistical data, and experience has shown that this data is most serviceable when it is presented by means of reports which show it in a summarized and classified form. Consequently business men have long been accustomed to using statistical reports.

The nature of these reports has been determined largely by necessity. When the executive has found that he must have certain information to carry on some activity which it has been necessary to perform, he has devised, or has had devised, a report which will provide him this information. The balance sheet and the statement of profit and loss are the two reports with which the executive is most familiar and which are most widely used. The reason for the extensive use of these reports is not difficult to see if the development of accounting records and reports is considered.

Every business finds it necessary in the course of its development to borrow funds from banks and to purchase merchandise on account. In the not distant past, both bank and merchandise creditors often granted credit on the basis of the general reputation of the applicant and the information which they could obtain from him in an informal manner. During recent years, however, they have found it necessary to have more exact information and to obtain this have required a formal report showing the financial condition of the business. Consequently the standard form of balance sheet has been developed for their use. The executive, being required to prepare this report for his creditors, gradually learned to make some use of it himself.

For many years creditors satisfied themselves with the information obtained from the balance sheet, but recently they have found it expedient to ask for additional information which will show the nature of the operations of the business and the result of these operations. They have found it desirable to have this information because they realize that, though the balance sheet shows the financial condition of the business at the time credit is requested, what the creditor is primarily interested in is its financial condition at the end of the period of credit. For instance, if a bank grants a loan for three months, it desires to know that the business will be able to pay the loan at maturity; hence it is interested to know its financial condition three months from now. If it knows its present financial condition and the result of its past operations, it can estimate roughly the effect of its future operations on its present condi-

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tion and arrive at an estimate of its financial condition three months in the future. The standard form of the statement of profit and loss has been designed to present to creditors and others the information with reference to the past operations of the business which they desire. Since the executive must prepare it for the use of others, he has learned, as in the case of the balance sheet, to use it for his own purposes.

The balance sheet and the statement of profit and loss have become therefore the two standard reports which are usually prepared by all businesses and which are used by the creditors, the stockholders, and the executives of the business in the making of decisions and the formulation of policies with reference to the business. Through the influence of national associations, such as the American Bankers' Association and the National Association of Credit Men, as well as the writings and teachings of accountants, more or less standard forms for these statements have been developed. It is assumed that the form and content of these widely used and orthodox statements are familiar to the reader.

The standard form of balance sheet and the standard form of statement of profit and loss show the present financial condition of a business and the results in terms of profit and loss of its operations over a certain period of time. This information serves two purposes:

1. It indicates the efficiency with which the business has been managed during the past.
2. It indicates the possible result of its future operations.

The second purpose of the information provided by the financial reports has not been emphasized by writers and practitioners, and yet a little thought will show that it is the primary purpose for which this information is desired. It is true that these reports are usually discussed in terms of past results, but the principal purpose of studying past results is to be able better to control future results. Just as the creditor desires a statement of profit and loss, so he can estimate the changes in financial condition which will probably take place as a result of the future operations for a certain period of time—so the executive is primarily interested in both the balance sheet and statement of profit and loss that he may be able to judge whether future operations will result in favorable changes in the financial condition of the business. It is true that both the creditor and the executive make their estimates informally and incompletely. Neither one may be conscious that he is making such estimates at all. His thought may proceed no farther than to reason that the operations for the past period have resulted in a profit and a favorable financial condition, and, if the same policies are followed during the next period, equally favorable results will follow.

If the results of the past period are undesirable, he may try to locate the cause and determine some means to remove it. If he succeeds in making changes which he thinks will remove the difficulties of the past period, he may assume that the results of the next period will be desirable without working out in detail what these results will be. For instance, the executive may find that his small profits for the year are due to increased production cost, and that the increased cost is the result of wasteful and inefficient methods of handling materials and supplies in certain departments of the factory. He changes the methods of these departments so as to lower the cost of materials and supplies and

assumes that as a result he will have a satisfactory profit without determining just what the change in profits will be. If he finds that the small profits are due to decreased sales and the decreased sales are due to the failure of salesmen in specific territories, he may replace these salesmen with those who are thought to be efficient and estimate that as a result of these changes favorable profits will be made.

II

In both of these cases the executive may carry his thinking a step farther. He may estimate the reduction in cost of materials which will be effected by the new methods and then calculate what the profits of the business will be for the next fiscal period if the other results of operation are the same as for the past period. In the same manner he may estimate the increased sales which will be secured from the changes in sales personnel and the consequent results in profits. If he makes a number of changes and estimates the results of each of these, he is led to make a more or less detailed estimate of the result of future operations.

The foregoing discussion and illustrations should be sufficient to show that the standard form of the balance sheet and statement of profit and loss are used as a basis of planning future operations and estimating the results of these operations. It should also be apparent that these plans and estimates are usually made in a very informal manner, and consequently, are apt to be incomplete and inaccurate. In fact, they are little more than "expert guesswork." In the discussion of the various departmental budgets, it has been emphasized that if estimates are to be made they will be most serviceable if they are prepared in a systematic, complete, and formal manner. In pursuance of this policy, it is desirable that there be prepared an estimated balance sheet or "budget" of assets, liabilities, and proprietorship, and an estimated statement of profit and loss or "budget" of income and expense in the same manner as a budget of sales, purchases, expenses, etc., is prepared. The following discussion explains the construction and use of these statements.

The departmental estimates show the contemplated operations of the several departments. The profits of the company and its financial condition are dependent on these operations. After the departmental estimates are prepared, it is then necessary to prepare a preliminary estimated balance sheet showing the effect of the contemplated program on the financial condition of the business and a preliminary estimated statement of profit and loss showing the results of the program in terms of profit and loss. By studying these two statements and comparing them with the statements at the beginning of the period, it is possible to judge the desirability of the prepared program. If the execution of the proposed program will lead to undesirable results, it will be necessary to revise the departmental estimates. After these revisions are made, the preliminary estimated financial reports should be revised giving effect to the changes in the departmental budgets. Although the budget period may be three, six, or twelve months in length, it is desirable that the estimated balance sheet and statement of profit and loss be made so as to show the anticipated results at the end of each month. Monthly comparisons can be made then between the estimated and the actual results.

In the following discussion the

method by which the estimated financial reports are made will be considered first, and then the method by which they are studied will be explained to see if they show the necessity of a revision in the departmental budgets.

To make the discussion of the preparation of the estimated balance sheet more concrete a simple balance sheet showing the financial condition of a business at the beginning of a fiscal period will be given and on the basis of assumed departmental budgets an estimated balance sheet, as of the end of the period, will be prepared. For the sake of simplicity a budget period, one year in length, will be assumed, and only the estimated balance sheet at the end of the year will be given. The reader will understand that an estimated balance sheet at the end of each month is desirable.

The balance sheet of the National Manufacturing Company as of December 31, 1919, is as shown in the following table (page 231).

To show the preparation of the estimated balance sheet as of December 31, 1920, it will be necessary to take each item which appears on the balance sheet at the beginning of the period and see the method by which the changes which will occur in it are determined.

III

The cash which it is estimated will be received from the operations of the business during the budget period will be shown by the Estimate of Cash Receipts which is prepared as part of "The Financial Budget."[1] The Estimate of Cash Receipts does not show the cash to be received from bank loans, for the purpose of the estimate of cash receipts and disbursements is to show the loans required. The amount of these loans can be determined from the Financial Program which is prepared on the basis of the financial budget.[2] The estimate of cash receipts also does not show the cash which may be received from new financing such as the sale of stocks or bonds. The amount of such cash must be obtained by a consideration of the plans of the directors.

The estimated disbursements for operating purposes can be obtained from the Estimate of Cash Disbursements.[3] The Estimate of Cash Disbursements does not show the disbursements for paying bonds or retiring long-term notes. Such disbursements can be determined easily from the plans of the directors and the terms under which the bonds or notes were issued.

After the estimated cash receipts from all sources and the estimated cash disbursements for all purposes are determined, the estimated cash balance can be determined. Although this is the method by which the estimated balance is finally obtained, it is customary to decide what cash balance is deemed necessary and use this in preparing the Summary of Financial Requirements from which the bank loans required are determined.[4] Of course, if the bank loans required, as shown by the preliminary Summary of Financial Requirements, are longer than it is thought desirable or possible to obtain, revisions are necessary, and, in making these revisions, the estimated cash balance may be cut down. Based on the financial budget of the National Manufacturing Company it is estimated that its cash balance on December 31, 1920 will be $20,000.

To determine the amount of the

[1] See Form 2, page 74, The Financial Budget, *Administration*, July.

[2] See Form 5, page 82, The Financial Budget, *Ibid.*

[3] See Form 3, page 80, The Financial Budget, *Ibid.*

[4] See Form 4, page 81, The Financial Budget, *Ibid.*

NATIONAL MANUFACTURING COMPANY
BALANCE SHEET, DECEMBER 31, 1919

ASSETS			
Current:			
Cash		$48,000.00	
Notes Receivable		80,000.00	
Accounts Receivable	$200,000.00		
Less: Reserve for Bad Debts	4,000.00	$196,000.00	
Inventory:			
Raw Materials	$40,000.00		
Goods in Process	120,000.00		
Finished Goods	560,000.00	$720,000.00	
Accrued Items		500.00	
Total Current Assets			$1,044,500.00
Fixed:			
Office Equipment	$40,000.00		
Less: Reserve for Depreciation	8,000.00	$32,000.00	
Machinery and Equipment	$200,000.00		
Less: Reserve for Depreciation	40,000.00	160,000.00	
Buildings	$160,000.00		
Less: Reserve for Depreciation	48,000.00	112,000.00	
Land		$240,000.00	
Total Fixed Assets			$544,000.00
Deferred Charges to Expense			27,000.00
Good-will			80,000.00
Total Assets			$1,694,000.00
LIABILITIES			
Current:			
Notes Payable		$100,000.00	
Accounts Payable		150,000.00	
Accrued Liabilities		10,000.00	
Total Current Liabilities			$260,000.00
Fixed:			
Mortgages Payable		$80,000.00	
Bonds Payable		80,000.00	
Total Fixed Liabilities			$160,000.00
Proprietorship:			
Capital Stock Outstanding		$1,000,000.00	
Surplus		274,000.00	
Total Proprietorship			$1,274,000.00
Total Liabilities and Proprietorship			$1,694,000.00

notes receivable which will be on hand at the end of the period, it is necessary to consider the following:

1. Notes receivable on hand at the beginning of the period.
2. Estimated notes receivable which will be received in payment of goods sold during the period.
3. Estimated notes receivable which will be received in payment of accounts during the period.
4. Estimated cash receipts from notes receivable during the period.

It should be apparent to the reader that 1+2+3−4 equals the notes receivable on hand at the end of the period. If a business has but a few customers, it will be possible to determine the amount of 2, 3, and 4 by considering each customer separately. If there are numerous customers, it may be necessary to obtain the ratio between accounts receivable and notes receivable for the past several years and assume that this ratio will continue during the current year if no changes in terms or of general business conditions are anticipated. If new lines are to be introduced, which are to be sold on different terms, or if business conditions are such that clients are apt to give notes in payment of accounts in greater quantities than usual, these facts must be considered, and the estimated ratio between notes receivable and accounts receivable revised accordingly. After this ratio is determined, it will be applied to the estimated balance of unpaid claims against customers at the end of the period and the amount of these claims which will be represented by notes receivable calculated.

The National Manufacturing Company sells several classes of product. Some of these are sold on account, and some are sold on terms which provide for the receipt of trade acceptances and notes in payment. The tendency for the past three years has been for an increase of the sales of the latter in proportion to the former. The sales program for the year 1920, calls for an increase in this tendency during the next year. It is also anticipated that general business conditions are such that more than the usual number of notes will be received from customers in settlement of due accounts. It is estimated that under these conditions the notes receivable on hand on December 31, 1920, will amount to $120,000.

The amount of the accounts receivable at the end of the budget period is estimated in a manner very similar to that employed in determining the amount of the notes receivable as explained in the preceding paragraph. It is necessary to consider: (a) The balance outstanding at the beginning of the period; (b) the accounts receivable resulting from the sales during the period; (c) cash receipts from accounts receivable during the period. It is apparent that a+b−c is equal to the accounts receivable at the end of the period.

On this basis it is estimated that the accounts receivable of the National Manufacturing Company on December 31, 1920, will be $180,000.

The reserve for bad debts at the beginning of the period is 2 per cent of the accounts receivable, and it is estimated that the same ratio will exist at the end of the year. Consequently it is estimated that the reserve will be $3600.

The inventory of raw materials at the end of the period can be obtained from the materials budget since this budget shows not only the deliveries to stock for each month, but also the balance on hand at the end of each month. The inventory of goods in process can be determined by a consideration of the following: (a) Inventory at beginning

of period; (b) cost of the materials, labor, and manufacturing expense put into process during the period; (c) finished goods transferred from factory to stock during the period. Therefore, a+b−c is equal to the inventory of goods in process at the end of the period. The items in (b) will be obtained from the estimate of raw material requirements, the labor budget, and the manufacturing expense budget. Item (c) will be obtained from the finished goods budget.

The inventory of finished goods can be obtained by a consideration of the following: (a) Inventory at the beginning of the period; (b) finished goods transferred from factory to stock during the period; (c) stock sold during the period. Therefore, a+b−c equals the inventory of finished goods at the end of the period. Usually in making up the estimate of finished goods required, the inventory desired of each separate item at the end of the period is estimated since this inventory constitutes a part of the requirements for the period. If the inventory of the separate items which it is planned to have is extended at cost price, the total inventory can be obtained. In some cases it may be easier to reduce the sales estimate by the amount of the average gross profit and substitute the result in the equation given above. Either method may be followed and approximate accuracy obtained.

On the basis of the present inventories and the various budgets, it is estimated that the inventories of the company on December 31, 1920, will be as follows:

Raw Materials	$70,000.00
Goods in Process	230,000.00
Finished Goods	1,100,000.00
Total	$1,400,000.00

The chief source of accrued income is accrued interest on notes receivable. The estimated increase in the amount of the notes will cause a corresponding increase in the amount of this item. Accordingly it is estimated to be $1000 on December 31, 1920.

IV

The plant and equipment budget shows the following for each class of fixed assets: (a) balance of asset and reserve for depreciation accounts at the beginning of the period; (b) estimated cost of assets to be acquired during the period; (c) estimated depreciation for the period on both old and new assets; (d) balance of asset and depreciation accounts at the end of the period. It is very easy, therefore, to obtain from the plant and equipment budget the desired information for the estimated balance sheet with reference to both the fixed assets and the depreciation thereon.

From the plant and equipment budget it is determined that the fixed assets and reserves for depreciation of the company on December 31, 1920 are estimated to be as follows:

Office Equipment	$60,000.00	
Less: Reserve for Depreciation	14,000.00	$46,000.00
Machinery and Equipment	280,000.00	
Less: Reserve for Depreciation	100,000.00	180,000.00
Buildings	200,000.00	
Less: Reserve for Depreciation	58,000.00	142,000.00
Land	———	240,000.00
Total Fixed Assets		$608,000.00

The deferred charges to expense consist of organization expenses, unexpired insurance, and prepaid interest. The organization expenses disappear from the balance sheet since this is the last year of the period over which they are being allocated. The unexpired insurance can be determined by a consideration of (a) the insurance which it is planned to place during the year, and (b) the insurance unexpired at the beginning of the year. The latter can be obtained from the Insurance Policy Record while the former must be obtained from the estimate on insurance. Usually there is one officer who is responsible for all insurance contracts. In many cases this responsibility is placed on the treasurer. The responsible official will prepare an estimate of the contracts to be made and their length of life. The prepaid interest will arise largely from the notes of customers which are discounted. The amount of the notes to be discounted can be determined from the Financial Program which is prepared in connection with the Financial Budget.

It is estimated that the deferred charges of the company on December 31, 1920, will be $35,000.

The book value of the good-will will not change during the year.

The amount of the notes payable at the end of the year will depend on the following: (a) Notes payable at beginning of the period; (b) notes issued in payment of merchandise; (c) notes issued in payment of accounts; (d) notes issued to banks for loans; (e) notes paid during the period. Then $a+b+c+d-e$ is equal to the notes outstanding at the end of the period. The notes to be issued to merchandise creditors in payment for merchandise can be determined by a consideration of the materials budget. This budget shows the purchases to be made during the period classified under at least major groups or classes. Usually it is for certain classes of merchandise only that notes are given or trade acceptances issued and the amount of these classes of merchandise which is to be purchased can be obtained from the materials budget. If notes or trade acceptances are issued for part of the purchases in different lines, it is then necessary to obtain the ratio between the purchases made for notes and the total purchases during past periods, and apply this percentage to the estimated purchases for the current period. In most businesses few, if any, notes are issued in payment of accounts. If such notes are issued, it is necessary to obtain the ratio between them and the total purchases on account and apply this ratio to the estimated purchases on account for the current period. The amount of the notes to be issued to banks can be obtained from the Financial Program prepared in connection with the financial budget. The disbursements made in the payment of notes payable are shown on the Estimate of Cash Disbursements. In addition to the notes discussed above, notes payable may be issued to officers, employees, and friends of a company. In this case a separate estimate must be made of the amount of these. On the balance sheet it is desirable to state the notes issued for separate purposes and to different parties as separate items. For the sake of brevity they will be stated as one item in the present case.

The notes payable of the company as of December 31, 1920, are estimated to be $540,000.

The amount of the accounts payable at the end of the period will be determined from the following: (a) Accounts payable at the beginning of the period; (b) purchases on account during the period; (c) payments made

on account during the period. Then a+b−c equals the accounts payable at the end of the period. The amount of the purchases on account will be obtained from the materials budget. The amount of the payments on account will be obtained from the Estimate of Cash Disbursements.

The accounts payable of the company as of December 31, 1920, are estimated to be $200,000.

V

The principal items of accrued liabilities are accrued interest on notes payable and accrued wages. Since the company is planning to increase greatly the amount of its notes payable, this will result in an increase in the accrued interest. Since it also plans to increase very much its inventory of finished goods, this will result in an increase in production with an enlarged labor force which in turn will probably result in a larger item of accrued wages. It is estimated that the accrued wages and accrued interest on December 31, 1920, will amount to $20,000.

The anticipated increase in fixed assets will necessitate additional capital and the treasurer recommends to the board of directors that the mortgages on real estate be increased by $40,000 and that $60,000 additional bonds be issued. Accordingly the fixed liabilities of the company on December 31, 1920, will be as follows:

Mortgages Payable........	$120,000.00
Bonds Payable............	140,000.00

The enlarged operations which are planned for the year will necessitate the procurement of additional capital. The president and the treasurer recommend to the board of directors that $250,000 of additional stock be sold. The capital stock of the company, therefore, will be $1,250,000 on December 31, 1920.

The amount of the surplus at the end of the period will be determined from the following: (a) Surplus at the beginning of the period; (b) profits for the period; (c) dividends to be declared. Then a+b−c will equal the surplus at the end of the period. The profits for the period are determined from the estimated statement of profit and loss. The dividends to be paid will be determined by the board of directors. Taking these factors into consideration it is estimated that the surplus of the company on December 31, 1920, will be $170,000.

On the basis of the information given in the preceding paragraphs it is possible to construct a preliminary estimated balance sheet for the National Manufacturing Company as of December 31, 1921. The contents of this report are shown in Exhibit II. As previously explained, the purpose of the preliminary estimated balance sheet is to show the effect on the financial condition of the business of the proposed plans for the next period as expressed in the departmental budgets. After it is prepared, it is necessary to study it to see whether it shows a desirable tendency, and, if it does not, revisions in the budgets should be made if possible so as to remedy the undesirable tendency. The easiest way to see the effect of the proposed budgets is to show the estimated balance sheet as of the end of the period in comparison with the actual balance sheet at the beginning of the period. This comparison for the National Manufacturing Company is shown in the following:

NATIONAL MANUFACTURING COMPANY
COMPARATIVE BALANCE SHEET

	1919			1920		
ASSETS						
Current:						
Cash		$48,000			$20,000	
Notes Receivable		80,000			120,000	
Accounts Receivable	$200,000			$180,000		
Less: Reserve for Bad Debts	4,000	196,000		3,600	176,400	
Inventories:						
Raw Materials	40,000			70,000		
Goods in Process	120,000			230,000		
Finished Goods	560,000	720,000		1,100,000	1,400,000	
Accrued Items		2,000			1,000	
Total Current Assets			$1,046,000			$1,717,400
Fixed:						
Office Equipment	40,000			60,000		
Less: Depreciation	8,000	$32,000		14,000	46,000	
Machinery and Equipment	200,000			280,000		
Less: Depreciation	40,000	160,000		100,000	180,000	
Buildings	160,000			200,000		
Less: Depreciation	48,000	112,000		58,000	142,000	
Land		240,000			240,000	
Total Fixed Assets			544,000			608,000
Deferred Charges to Expense			24,000			35,000
Good-will			80,000			80,000
Total Assets			$1,694,000			$2,440,400
LIABILITIES						
Current:						
Notes Payable		$100,000			$540,000	
Accounts Payable		150,000			200,000	
Accrued Liabilities		10,000			20,400	
Total Current Liabilities			$260,000			$760,400
Fixed:						
Mortgages Payable		80,000			120,000	
Bonds Payable		80,000			140,000	
Total Fixed Liabilities			160,000			260,000
Proprietorship:						
Capital Stock Outstanding		1,000,000			1,250,000	
Surplus		274,000			170,000	
Total Liabilities and Proprietorship			1,274,000			1,420,000
			$1,694,000			$2,440,400

The most significant comparisons shown by this chart will be considered.

It is estimated that the cash balance at the end of the year will be but slightly more than 40 per cent of the cash balance at the beginning of the year. A decrease in the cash balance is not in itself undesirable. In some cases it may be desirable, for the cash balance at the beginning of the period may have been too large. The important question to determine is whether the cash balance at the end of the year is sufficient. Although this question cannot be answered definitely, since there are no definite standards by which to judge the cash balance which a business should have, there are indications that the estimated balance for the company is too small. In the first place the current liabilities are $760,000, and it is safe to assume that these are maturing each day. The current assets presumably are also being converted into cash every day, but it is not difficult to conceive of a situation where the liabilities maturing on a particular day may be more than the funds received from current assets on that day, plus a cash balance of $20,000. Then, of course, it is impossible or at least impractical, to pay out the total cash balance. The primary purpose of the cash balance is to take up the possible slack between cash receipts and cash disbursements, and it is unwise to reduce this balance to too small an amount, especially if, as in this case, the excess of current assets over current liabilities is not large. A more important indication of the inadequacy of the estimated cash balance is the ratio between the cash balance and the notes payable. The latter item is not analyzed, but it is safe to assume that a considerable part of the notes outstanding on December 31, will be in the hands of the bankers of the firm. Practically all banks require that a customer maintain a bank balance which bears a certain ratio to the loans made to the customer by the bank. Many banks require that the balance shall be 20 per cent of the loans granted to the customer. If such a cash balance is required by the bankers of this company, its maximum bank loans on December 31, would be $100,000. It is hardly to be conceived that less than one-fifth of the notes issued by the firm are to bankers. It is probable that the estimated balance sheet calls for an impossible condition by planning for larger bank loans than the cash balance will make possible. In any case a business doing the volume of business which this balance sheet indicates should not at any time be in such a condition as to be unable to borrow more than $100,000 from its banks. The estimated statement of profit and loss which will be given later will confirm the inadequacy of this cash balance. Revisions in the budgetary program which will accomplish its increase will be discussed subsequently.

VI

The notes receivable show an estimated increase of 50 per cent while the accounts receivable show a decrease. This is rather an unusual situation, since an increase in the volume of business should produce a corresponding increase in both. In the preceding discussion of the method of determining the amount of the notes receivable, it has been explained that the statistics of past periods show a tendency for the sales for which notes are received in payment to increase faster than the sales on account. There may be conditions under which this tendency will not be regarded as undesirable, but usually

notes received in payment of merchandise are non-interest bearing and are for a considerably longer length of time than the usual credit period granted on open account sales. Consequently the seller is required to borrow funds with which to carry these notes or must discount them to obtain funds. In either case the interest charge must be borne by him, which in turn reduces his profit. Unless a higher sales price is obtained for goods sold on notes, less profit is obtained, usually, than for goods sold on account. The estimated balance sheet shows such a radical change in the ratio of accounts receivable to notes receivable that a careful examination should be made of the tendency shown by the comparisons of past periods to see whether the tendency for the notes receivable to increase more than in proportion to the accounts receivable should be permitted to continue, or whether strenuous efforts should be made to correct it by enforcement of stricter credit terms or by placing more sales effort on other lines.

The estimated inventories of December 31, 1920, are almost twice what the inventories are at the beginning of the year. The estimated increases in the inventories of raw materials and goods in process are no doubt the result of the estimated increase in production which is required to build up and maintain the large increase in finished goods for which the estimated balance sheet calls. Such an estimated increase in finished goods may result from the following:

1. A large increase in sales may be estimated and this calls for an increased inventory. Whether the increase called for is justified can be determined to some extent by considering the turnover shown by the estimated statement of profit and loss and comparing this turnover with the turnover shown by previous statements.

2. It may be due to careless and inaccurate planning on the part of the production department. This department may not accurately estimate the required inventory of each item to be manufactured, basing this estimate on the estimate of sales, but rather may make a lump estimate of the inventory desired.

A very careful investigation should be made to see: (1) Whether the estimated inventory is necessary in order to meet the estimated sales; (2) whether it is possible to finance such an inventory, even if it is necessary to meet estimated sales; and (3) whether it is desirable to tie up so much capital in inventory with the consequent carrying charges and the possibility of a large loss due to falling prices. It may be found more profitable and better financial policy to reduce sales and carry a smaller inventory. There is usually great danger attendant on such a rapid expansion as the increase in the inventories indicate that this company is contemplating. It is also significant to note that though the notes receivable and accounts receivable have increased less than eight per cent the inventory of finished goods has increased almost 100 per cent. This indicates that it must be planned to increase the inventory of finished goods faster than is required by the sales program since increased sales, without a change in terms or collection methods, will result in an increase in the accounts receivable and notes receivable.

A statement of the suggested procedure for the company to follow in connection with its inventories will be postponed until after the estimated statement of profit and loss is considered.

The estimated balance sheet shows a considerable increase in Office Equipment, Machinery and Equip-

ment, and Buildings. In determining the propriety of these increases, it is necessary to consider the following:

1. Whether the increases shown represent anticipated expenditures which can properly be chargeable to the asset accounts. Care must be taken to see that they do not represent estimated appreciation on the assets or estimated expenditures for repairs or replacements. If these increases are based on the Plant and Equipment Budget, it should be easy to determine their accuracy.
2. Whether the estimated increases in these assets are necessary to carry on the contemplated program of the year.
3. Whether, if they are necessary, it will be possible to finance them.
4. Whether it will be profitable to incur these increases in order to carry on the contemplated program.

The estimated depreciation should be investigated to see if it is calculated at the proper rate. The figures shown would seem to be reasonable in view of the estimated increase in assets.

The increase in the deferred charges would seem to be reasonable in view of the estimated increase in value of the assets on which insurance should be carried and the probability of the increase in prepaid interest. To determine the desirability of the amount of the deferred charges to expense, it is necessary to consider the advisability of incurring the expenses which give rise to these charges.

Turning to the liability side of the comparative balance sheet, it will be noticed that a large increase in the notes payable is estimated. The notes payable of December 31, are estimated to be almost five and one-half times the amount outstanding at the beginning of the year. An increase in the accounts payable is also estimated, but this increase is by no means in proportion to the contemplated increase in notes payable. An analysis should be made to show to whom it is planned to issue these notes. It is regarded as good financial management to borrow funds on notes issued to banks and to use these funds to discount accounts payable. An inspection of the item of purchases discount on the comparative statement of profit and loss which is shown on page 242, will serve to show whether this procedure is contemplated. If it is, the estimated purchases discount should show a large increase over the amount of last year. There are indications, that it is contemplated that large bank loans must be contracted in order to pay accounts payable contracted to secure the large increase in inventories. If this be true, there is considerable doubt of the advisability of the contemplated large increase in bank loans. In the first place, it is doubtful whether banks would loan the amount called for by the estimated balance sheet on the strength of the financial condition shown by this statement. In the second place it is doubtful if the firm should contract such a large amount of loans in order to carry large inventories. If the inventories are not converted very rapidly, the firm will be unable to meet the notes at maturity.

VII

It is estimated that the bonds payable and mortgages payable will both increase during the year. Presumably the funds to be secured from these increases are to be used in making the increase to the fixed assets. If the increases in fixed assets are found to be justifiable, it may not be improper to increase the fixed liabilities correspondingly. However, the more desirable procedure is for a business to increase its permanent assets out of profits. A rapidly expanding busi-

ness will often find this impossible, and, if there is assurance that a rapid expansion will be profitable, no objection can be made to the procedure contemplated by this company. It must be remembered, however, that fixed liabilities impose upon a business fixed charges which must be met if the business is to continue to operate and that fixed liabilities are not subject to rapid contraction as are current liabilities. A business should therefore be cautious in adopting a program which necessitates an increase in its fixed liabilities.

The estimated balance sheet shows an increase in capital stock of $250,000. This increase strengthens the indications of the other comparisons that the company is embarking on an extensive program of expansion. If its plans are dependent on the sale of stock, it should be assured before embarking upon its year's program that the stock can be sold. Otherwise it may find itself greatly embarrassed because the estimated balance sheet shows that the company has used practically every other available source of additional capital.

The estimated balance sheet shows a large decrease in the surplus for the year. This decrease may result: (a) From a loss being incurred during the year; (b) from the paying of dividends in excess of the profits of the year. Either condition indicates an undesirable situation. To incur a loss is always undesirable. There are times when it may be desirable to pay dividends from accumulated profits, but the balance sheet of this company does not indicate that such a procedure is desirable for it. In the first place the surplus of the company is not large in comparison to its capital stock. Secondly, the company is planning on issuing new stock and additional bonds in order to obtain necessary capital. It is also planning on contracting very large liabilities in the form of notes payable. Under such conditions it does not seem expedient to use funds to pay dividends which are declared from profits of preceding years.

A final comparison which is of considerable significance is that of the ratio of current assets to current liabilities. On December 31, 1919, this ratio is slightly more than 4 to 1, while the estimated balance sheet of December 31, 1920 shows a ratio of only 2⅕ to 1. It can be seen, therefore, that there is a decided decrease in this ratio. Although the ratio on December 31, 1920, does not in itself appear very unfavorable, the tendency indicated by the decrease in this ratio during the year is decidedly undesirable. If possible, changes should be made to prevent this decided increase in this ratio. In any case, care must be exercised to see that this tendency does not continue.

If departmental estimates are properly prepared, it is not difficult to prepare an estimated statement of profit and loss. The estimates state the amounts which are necessary for its preparation. The sales can be taken directly from the sales estimate. All the information necessary for the determination of the cost of goods sold can be determined from the statistics developed in the preparation of the estimated balance sheet. The method of obtaining this information has been explained in a preceding paragraph. The amount of the various expenses can be obtained directly from the expense budgets. The non-operating income can be obtained by simple calculations based on the information contained in the various budgets. For instance, the purchases discount can be estimated by applying the ratio of purchases discount to the total purchase of previous years to the estimated

purchases of the current year. Interest earned can be calculated on the basis of the sales estimate and the ratio of interest received to sales during preceding years. Contemplated changes in policy must be given effect in making these estimates. Of course these estimates will be only approximate, but the amount of these items is not so large as to make it necessary to estimate them with absolute exactness.

The most convenient and effective way to show the effect of the proposed budgets on the profits of the business is to show the estimated statement of profit and loss as of the end of the period in comparison with the actual statement of profit and loss at the beginning of the period. The statement of profit and loss of the National Manufacturing Company as of December 31, 1919, and its estimated statement of profit and loss as of December 31, 1920, are shown in the following table (page 242).

The estimated sales show an increase of 50 per cent. This in itself looks very favorable, but the result of these sales in terms of profit and loss must be considered before a final conclusion can be made.

The merchandise turnover for the year 1919, is 3.4, while for the year 1920, it is estimated to be only 2.5. This comparison shows a decided decrease in the rate of turnover which should be given careful consideration. The relation of this decrease in turnover to the inventories will be explained later in this discussion.

The gross profits on sales in 1919, are approximately 12⅛ per cent of sales while the estimated gross profits for 1920, are only 11 per cent of sales. This indicates that the estimated production cost of goods sold increases faster than the estimated sales price of sales. Or, if falling prices are anticipated, it may be estimated that the sales price will fall faster than the production cost. This may be a situation which is unavoidable, but careful scrutiny should be made to determine any means by which it may be possible to remedy it. The tendency indicated by this comparison is a dangerous one, and one which is apt to occur if there is not very close co-operation between the sales and production departments.

VIII

The selling expenses are .027 of sales for the year 1919, but according to the estimated statement of profit, are to be .035 for the year 1920. This shows that though the sales are expected to increase the proposed marketing plans are such that it will cost more to secure each dollar of sales than during the last year. An analysis of the sales expense will probably show that this increase is due to the estimated extra cost of salesmen's salaries and expenses and of advertising. It may be planned to incur these increased expenses to obtain additional business and build up good-will for the company. It may be proper to increase these, but the tendency for such expenses to increase faster than sales increase is a dangerous one, and care should be taken that it does not continue too long.

The total operating expenses for 1919, are 8 per cent of sales while for the year 1920, it is estimated that they will be 9 per cent. Although this increase is not large it shows an undesirable and a dangerous tendency, and a careful examination should be made to see if it is possible to change this condition before the budgets are approved.

The net operating profit for 1919 is 4 per cent of sales, while it is estimated

NATIONAL MANUFACTURING COMPANY
COMPARATIVE STATEMENT OF PROFIT AND LOSS

	1919		1920	
Gross Sales		$1,600,000		$2,400,000
Less: Sales Returns and Allowances		16,000		24,000
Net Sales		$1,584,000		$2,376,000
Cost of Goods Sold:				
Raw Materials, Beginning Inventory	$18,000		$40,000	
Purchases	600,000		962,000	
	$618,000		$1,002,000	
Raw Materials Inventory End of Period	40,000		70,000	
Raw Materials Used		$578,000		$932,000
Labor Used		625,000		1,130,000
Manufacturing Expense		575,000		700,000
		$1,778,000		$2,762,000
Work in Process, January 1		50,000		120,000
		$1,828,000		$2,882,000
Work in Process, December 31		120,000		230,000
Cost of Foods Manufactured		$1,708,000		$2,652,000
Finished Foods, Beginning Inventory		240,000		560,000
		$1,948,000		$3,212,000
Finished Goods, End of Inventory		560,000		1,100,000
Cost of Goods Sold		$1,388,000		$2,112,000
Gross Profit on Sales		$196,000		$264,000
Operating Expenses:				
Selling Expenses		$44,000		$85,000
Financial Expenses		30,500		47,500
Executive Expenses		25,000		41,500
Corporate Expenses		18,000		23,000
		10,500		19,000
Total Operating Expenses		$128,000		$216,000
Net Operating Profit		$68,000		$48,000
Non-operating Income		24,800		20,800
Gross Income		$92,800		$68,800
Non-operating Expense		31,000		53,600
Net Income		$61,600		$15,200

to be but 2 per cent of sales for the year 1920. It is also estimated to be smaller in amount in 1920 than in 1919. This is the most discouraging information shown on the comparative statement of profit and loss. When it is estimated that the sales will increase 50 per cent, it is decidedly unsatisfactory to find an estimated decrease in net profit. It, of course, may be found that some of the expenses to be incurred during the coming year are expected to result in increased business during future years. If this be true, there may be some excuse for the unprofitable showing, but a careful examination should be made to ascertain if this is the situation.

It is estimated that there will be a large increase in the non-operating expenses for the year. This increase is probably due to the anticipated increase in interest resulting from the additional bonds and notes which are to be issued and the increase in the amount of the mortgages payable.

The estimated net income for 1920 is approximately ¼ of the net income for the year previous. This shows that the proposed program for the year is not a proper one since a 50 per cent increase in volume of business leads to a 75 per cent decrease in net income.

If the comparative balance sheet given on page 236 is studied in connection with the comparative statement of profit and loss shown on page 242, a few significant indications are shown:

1. The comparative statement of profit and loss confirms the indications of the comparative balance sheet that a large increase in business is contemplated. It shows that the budgets are all based on a policy of expansion.

2. The comparative balance sheet shows a large anticipated increase in inventory or finished goods and an increase which is much larger proportionally than the anticipated increase in sales, as shown by the comparative statement of profit and loss. Whereas it is estimated that the sales will increase 50 per cent, it is estimated that the inventory of finished goods will increase almost 100 per cent. The comparative statement of profit and loss shows a decrease in the merchandise turnover. It is hard to conceive of conditions which would necessitate such a change in the rate of turnover in one year. These comparisons show rather conclusively that the proposed production program is out of harmony with the sales program and should be cut down.

3. The comparative balance sheet shows an estimated decrease in surplus of $104,000. The comparative statement of profit and loss shows a profit for the year of $15,200. It is evident, therefore, that it is planned to pay dividends which will necessitate the distribution of a considerable part of the accumulated surplus. The financial condition of the business, as shown by the comparative balance sheet, indicates that such a procedure would be unwise.

It is very probable that a study of the estimated balance sheet (page 236) and the estimated statement of profit and loss (page 242) would lead to a revision of the departmental estimates on which these statements are based. This revision is necessary for three reasons:

1. The estimated balance sheet shows that the contemplated program for the year will result in the firm's showing an unsatisfactory financial condition at the end of the year.

2. The estimated statement of profit and loss shows that the contemplated program will result in an unsatisfactory profit for the year.

3. The financial budget which shows the financial requirements of the proposed program would undoubtedly show larger requirements than the firm could finance. As already pointed out, the financial condition of the firm, as shown by its estimated balance sheet, does not warrant the pro-

curement of the quantity of loans for which the balance sheet calls.

Some of the revisions which may very possibly be made are the following:

1. The sales program would be scrutinized very carefully to determine if all the sales for which it calls can be made profitable. If not, those which are not profitable will be eliminated.

2. The sales program will also be examined to see if it is not possible to increase sales to be made on short-term credit and to reduce those made on long-term credit. Any possible changes will be made.

3. The estimated inventory of finished goods will be cut down to be in harmony with the sales program. This will result in a decrease in the production program with a consequent decrease in labor, materials, and manufacturing expense cost.

4. If possible, the plant and equipment program will be cut down. This will be all the more possible because of the decrease in the production program.

5. The proposed dividend may be passed.

6. The operating expense estimates will be reduced, if possible, so that the ratio of operating expenses to sales will not be in excess of the previous year and, if possible, so that it will be smaller.

7. Based on the foregoing revisions, the financial budget will be revised.

The purpose of the foregoing discussion is to explain and illustrate the use of the estimated balance sheet and estimated statement of profit and loss in business planning and administration. More particularly it attempts to show their relation to the general budgetary plans of the business. The development of the use of financial reports as a basis of management may be divided into three stages:

1. Business men learned to use the balance sheet which shows them where they are at a specific date.

2. They learned to use the statement of profit and loss which shows them how they got to where they are.

3. They are just now learning to use the estimated balance sheet and estimated statement of profit and loss which shows them where they are going and how they are going to get there.

The slow growth of the use of the estimated balance sheet and estimated statement of profit and loss has no doubt been due in part to the attitude maintained by public accountants that the function of the accountant is to make statements showing the results of past operations and not to prophesy as to what will happen in the future. This attitude is due probably to the realization that, since they are not connected with the business, they have no control over its future operations, and therefore, cannot safely predict their result. They feel that such statements on their part might be used to mislead the public and this would react to their disfavor. Although the public accountant may be justified in this attitude because of the particular relations existing between him and his client, this in no way detracts from the value of the estimated financial statements as a basis of managerial control.

The bookkeeper has also failed to prepare estimated financial reports because he makes up his reports from the accounts and the accounts do not reflect the decisions of the executives of the company with reference to results expected.

No doubt in the not distant future both the accountant and the business man will come to realize that all financial statements are but estimates, and, although estimates of past results, as shown by the standard balance sheet and statement of profit and loss, may be more exact, estimates of future results may be equally useful.

PROBLEMS FOR THE BUSINESS EXECUTIVE

ANALYSIS OF GENERAL LEDGER AND PRELIMINARY LAYOUT FOR WORKING SHEETS

By H. D. Grant*

INTERESTING and complicated problems are oftentimes met by the accountant in the mechanical handling of his facts to get the information essential to the investigation he is making. Determining results for split or broken fiscal periods from the facts available may, at times, tax his ingenuity as to the best method of getting his material together. The following problem based on actual experience in making an investigation preliminary to a consolidation affords a good illustration. An audit and report covering two years were to be made with whatever adjustments might be necessary to determine the true condition of the business as of March 31, 1920.

The company subject to the investigation began business on April 1, 1918, and the books were closed at the end of each calendar year, i.e., December 31. The object of the investigation and report was to determine the volume of business done for two years, and each year was to be shown separately for the purpose of comparing the increases and decreases in expense and income.

Since all the accounts on the general ledger had been closed and the balances brought down at the end of each fiscal period, December 31, 1918, and 1919, respectively, and since the report had to be made to show the years ending as of March 31, 1919 and 1920, the closing entries made according to the calendar year had to be ignored and profit and loss determined for the periods called for by the investigation and report. The procedure used to accomplish the desired results was as follows:

As the books had been closed December 31, 1918, which was the end of the first fiscal period, comprising, therefore, only nine months, all accounts on the general ledger had, on that date, been ruled off, and balances brought down or transferred. A careful elimination of these "balance" and "transfer" items from the account totals for the nine months was necessary in order to arrive at the amount of the total debits and credits made to each account up to December 31. These amounts were then entered in columns 1 and 4. The pencil footings of each account as made on the general ledger March 31, 1919 included balances brought down, both debit and credit, and all such footings were taken, less the balances brought down December 31, 1918, which gave the amount of the total debit and credit entries made for three months of the year 1919. These amounts were then entered in columns 2 and 5. The sum of the entries made to columns 1 and 2, and columns 4 and 5 respectively, gave the figures for the trial balance shown in columns 3 and 6 constituting twelve months' operations ending March 31, 1919.

The sheet is first laid out properly sectioned as shown in the exhibit, and after columns 3 and 6 are proved to be in balance, a trial balance of balances is made. This forms a working trial balance which is to be adjusted into the balance sheet and profit and loss figures after all the changes for correction have been made as disclosed during the progress of the audit. (See Exhibit 1, pages 246 and 247).

The next step is to arrive at the total entries composing the amount of the debits and credits made during the second year as required by the report. First the columns 1 to 10 were drawn up as shown in the exhibit. The column titles indicate briefly the procedure followed. From the accounts on the ledger, enter in columns 1 and 6 the trial balance footing debit and credit for the year ended December 31, 1919, care being exercised not to include any "balance" or "transfer" items as of either December 31, 1918 or December 31, 1919, the amounts used representing, therefore, only

* Member of the staff of W. B. Richards and Company, Engineers and Accountants, New York City.

INDEPENDENT WARE
NEW
GENERAL LEDGER ANAL
Articulating the Entries for the Per

Account	1	2	3	4	5	6
	Debits			Credits		
	Dec. 31, 1918	March 31, 1919	Total	Dec. 31, 1918	March 31, 1919	Total
Capital Stock				$ 1,400.00		$ 1,400.00
Cash	$101,778.00	$ 41,727.12	$143,505.12	95,045.78	$ 42,752.12	137,797.90
Furniture and Fixtures						
Cartage	12,761.84	4,024.98	16,786.82	15,093.62	3,757.32	18,850.94
Equipment						
Expense	52,290.84	9,999.82	62,290.66	1,242.50		1,242.50
Deposits						
Freight	28,453.84	12,080.66	40,534.50	28,956.76	14,501.92	43,458.68
Unexpired Insurance						
Insurance	1,513.88	39.58	1,553.46	931.42	334.80	1,266.22
Labor	18,364.94	8,480.12	26,845.06	23,492.44	6,886.30	30,378.74
Accounts Receivable, "D. L. & W."	75,904.24	27,767.98	103,672.22	55,816.06	22,853.88	78,669.94
Storage	3,818.74	193.32	4,012.06	58,793.74	19,724.86	78,518.60
Notes Payable	15,000.00		15,000.00	47,208.00		47,208.00
Accounts Payable						
Interest and Discount	340.00	76.70	416.70	137.76	31.10	168.86
Taxes	4.40	.20	4.60	239.04	7.14	246.18
F. J. Anderson	15,000.00	200.00	15,200.00	18,000.00		18,000.00
T. Denison		200.00	200.00	4,600.00		4,600.00
Reserve for Depre.—Furn. and Fix.						
Charles Francis		200.00	200.00	4,600.00		4,600.00
Reserve for Depre.—Equipment						
S. Grant		200.00	200.00	4,600.00		4,600.00
T. A. Morrison		200.00	200.00	4,600.00		4,600.00
H. G. Smith		200.00	200.00	4,600.00		4,600.00
Notes Receivable		2,000.00	2,000.00		449.78	449.78
P. & L.—Interim Dr. & Cr.	3,400.40	506.40	3,906.80	26.10		26.10
Accounts Receivable—Customers	60,363.98	23,813.00	84,176.98	19,611.88	20,610.66	40,222.54
Landlord's Alter. and Improvements						
Net Profit						
Surplus						
Totals	$388,995.10	$131,909.88	$520,904.98	$388,995.10	$131,909.88	$520,904.98

Exhibit 1

HOUSE COMPANY, INC.

YORK

YSIS AND WORKING SHEET

IOD OF ONE YEAR ENDING MARCH 31, 1919

Trial Balance		Adjustments		Balance Sheet		Profit and Loss	
March 31, 1919		March 31, 1919		March 31, 1919		March 31, 1919	
Debit	Credit	Debit	Credit	Assets	Liabilities	Expense	Revenue
....	$ 1,400.00	....	....	....	$ 1,400.00	....	....
$ 5,707.22	....	....	....	$ 5,707.22	....	....	....
....	....	J 4 $501.00	....	501.00	....	....	....
....	2,064.12	J 7 1,024.12 J 4 1,040.00	....	....	....	....	$ 1,024.12
....	....	J 4 595.58	....	595.58	....	....	....
61,048.16	....	J 1-2, 5-6 5,183.24	J 8 $54,924.58 J 1-4 11,306.82	....	....	$54,924.58	....
....	....	J 4 160.00	....	160.00	....	....	....
....	2,924.18	....	....	....	2,924.18	....	....
....	....	J 4 210.04	....	210.04	....	....	....
287.24	....	....	J 8 287.24	....	....	287.24	....
....	3,533.68	J 7 8,404.74 J 2 68.94	J 1 4,940.00	....	....	....	8,404.74
25,002.28	....	....	....	25,002.28	....	....	....
....	74,506.54	J 7 74,506.54	....	....	....	....	74,506.54
....	32,208.00	....	....	....	32,208.00	....	....
....	....	....	J 2 98.94	....	98.94	....	....
247.84	....	....	J 8 247.84	....	....	247.84	....
....	241.58	J 7 241.58	....	....	....	....	241.58
....	2,800.00	....	....	....	2,800.00	....	....
....	4,400.00	....	....	....	4,400.00	....	....
....	....	....	J 5 50.10	....	50.10	....	....
....	4,400.00	....	....	....	4,400.00	....	....
....	....	....	J 5 59.56	....	59.56	....	....
....	4,400.00	....	....	....	4,400.00	....	....
....	4,400.00	....	....	....	4,400.00	....	....
....	4,400.00	....	....	....	4,400.00	....	....
1,550.22	....	....	....	1,550.22	....	....	....
3,880.70	....	....	J 8 3,880.70	....	....	3,880.70	....
43,954.44	....	....	....	43,954.44	....	....	....
....	....	J 4 1,130.00 J 3 7,670.20	J 6 103.58	8,696.62	....	....	....
						$59,340.36	$84,176.98
....	....	....	J 9 24,836.62	....	....	J 9 $24,836.62	....
....	....	....	....	....	24,836.62	....	....
$141,678.10	$141,678.10	$100,735.98	$100,735.98	$86,377.40	$86,377.40	....	....

EXHIBIT 1—*Continued*

INDEPENDENT WARE
NEW

GENERAL LEDGER PROOF AN
Articulating the Entries for

Account	1	2	3	4	5	6	7	8
	Debits					Credits		
	Dec. 31, 1919	Mar. 31, 1920	Total	Less Mar. 31, 1919	Net Total	Dec. 31, 1919	Mar. 31, 1920	Total
Capital Stock "Issued"								
Cash	$186,353.28	$50,277.36	$236,631.14	$41,727.12	$194,904.02	$188,699.44	$50,200.50	$238,899.94
Furniture and Fixtures								
Cartage	16,367.02	6,046.04	22,413.06	4,024.98	18,388.08	16,215.86	6,254.58	22,470.44
Equipment								
Expense	54,500.46	10,814.76	65,315.22	9,999.82	55,315.40	70.38	114.10	184.48
Deposits								
Freight	63,671.06	26,236.50	89,907.56	12,080.66	77,826.90	68,348.18	26,256.24	94,604.42
Unexpired Insurance								
Insurance	296.28	331.84	628.12	39.58	588.54	1,216.00	381.00	1,597.00
Labor	36,274.32	11,668.66	47,942.98	8,480.12	39,462.86	24,301.90	8,036.20	32,338.10
Acc'ts Rec. "D. L. & W."	143,613.18	50,509.78	194,122.96	27,767.98	166,554.93	126,842.94	40,519.58	167,362.52
Storage	4,830.68	84.72	4,915.40	193.32	4,722.08	70,335.68	27,076.64	97,412.32
Notes Payable		1,000.00	1,000.00		1,000.00			
Acc'ts Payable								
Interest and Discount	451.80		451.80	76.70	375.10	562.96	179.36	742.32
Taxes	1.20	29.18	30.38	.20	30.18	695.16	217.68	912.84
F. J. Anderson	4,600.00		4,600.00	200.00	4,400.00	1,600.00		1,600.00
T. Denison	4,600.00		4,600.00	200.00	4,400.00			
Reserve for Depreciation —Furn. and Fix.								
Charles Francis	4,600.00		4,600.00	200.00	4,400.00			
Reserve for Depreciation —Equipment								
S. Grant	4,600.00		4,600.00	200.00	4,400.00			
T. A. Morrison	4,000.00		4,600.00	200.00	4,400.00			
H. G. Smith	4,600.00		4,600.00	200.00	4,400.00			
Notes Receivable	2,000.00		2,000.00	2,000.00		2,000.00		2,000.00
P. & L.—Interim Dr. & Cr.	824.82		824.82	506.40	318.42	64.16		64.16
Landlord's Alteration and Improvement								
Acc'ts Rec.—Customers	73,854.84	23,512.32	97,367.16	23,813.00	73,554.16	109,686.28	21,275.78	130,962.06
H. A. Wilson	800.00		800.00		800.00	800.00		800.00
Surplus								
Totals	$611,438.94	$180,511.66	$791,950.60	$131,909.88	$660,040.72	$611,438.94	$180,511.66	$791,950.60

Exhibit 2

HOUSE COMPANY, INC.
YORK

ALYSIS FOR THE FULL PERIOD
ONE YEAR ENDING MARCH 31, 1920

9	10	Trial Proof		Trial Balance		Adjustments		Trial Balance	
		Yr. Ended Mch. 31, 1920		March 31, 1919		March 31, 1919		March 31, 1920	
Less Mch. 31, 1919	Net Total	Debits	Credits	Debits	Credits	Debits	Credits	Debits	Credits
....	....	....	....	....	$ 1,400.00	....	....	....	$ 1,400.00
$ 42,752.12	$196,147.82	....	$ 1,243.80	$ 5,707.22	....	....	....	$ 4,463.42	....
....	....	....	....	....	....	$ 501.00	....	501.00	....
3,757.32	18,713.12	....	325.04	....	2,064.12	2,064.12	....	....	325.04
....	....	....	....	....	....	595.58	....	595.58	....
....	184.48	$ 55,130.92	....	61,048.16	....	5,183.24	$ 66,231.40	55,130.92	....
....	....	....	....	....	....	160.00	....	160.00	....
14,501.92	80,102.50	....	2,275.60	....	2,924.18	....	....	....	5,199.78
....	....	....	....	....	....	210.04	....	210.04	....
334.80	1,262.20	....	673.66	287.24	....	....	287.24	....	673.66
6,886.30	25,451.80	14,011.06	....	....	3,533.68	8,473.68	4,940.00	14,011.06	....
22,853.88	144,508.64	21,846.34	....	25,002.28	....	....	....	46,848.62	....
19,724.86	77,687.46	....	72,965.38	....	74,506.54	74,506.54	....	....	72,965.38
....	....	1,000.00	....	....	32,208.00	....	....	....	31,208.00
....	....	....	....	....	....	....	98.94	....	98.94
31.10	711.22	....	336.12	247.84	....	....	247.84	....	336.12
7.14	905.70	....	875.52	....	241.58	241.58	....	....	875.52
....	1,600.00	2,800.00	....	....	2,800.00	....	....	....	....
....	....	4,400.00	....	....	4,400.00	....	....	....	....
....	....	....	....	....	....	....	50.10	....	50.10
....	....	4,400.00	....	....	4,400.00	....	....	....	....
....	....	....	....	....	....	....	59.56	....	59.56
....	....	4,400.00	....	....	4,400.00	....	....	....	....
....	....	4,400.00	....	....	4,400.00	....	....	....	....
....	....	4,400.00	....	....	4,400.00	....	....	....	....
449.78	1,550.22	....	1,550.22	1,550.22	....	....	....	....	....
....	64.16	254.26	....	3,880.70	....	....	3,880.70	254.26	....
....	....	....	....	....	....	8,800.20	103.58	8,696.62	....
20,610.66	110,351.40	....	36,797.24	43,954.44	....	....	....	7,157.20	....
....	800.00	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	24,836.62	....	24,836.62
$131,909.88	$660,040.72	$117,042.58	$117,042.58	$141,678.10	$141,678.10	$100,735.98	$100,735.98	$138,028.72	$138,028.72

EXHIBIT 2—*Continued*

current entries for 1919. In columns 2 and 7 were entered the pencil footings as shown, debit and credit on each account March 31, 1920, less the balances brought down December 31, 1919. The sum of columns 1 and 2 and columns 6 and 7, were then entered in columns 3 and 8 respectively. The amounts in columns 1 and 6, of course, include the amounts in columns 2 and 4 of Exhibit 1. The figures for the first three months of 1919 must, therefore, be eliminated, so these amounts were entered on Exhibit 2 in columns 4 and 9 as deductions from columns 3 and 8 respectively. The difference between the amounts in columns 3 and 4 is extended in column 5, and that of columns 8 and 9 in column 10. Then column 5 will show the total amount of debit entries, and column 10 the total amount of credit entries that were made during the second year which ended March 31, 1920. The trial balance of balances is then set up, called here a Trial Proof, this including only entries made on the books between March 31, 1919, and March 31, 1920, no balances from the previous year being included.

The three debit and credit sections following the trial proof are for the purpose of consolidating the balances carried over from the year ending March 31, 1919, with the amounts entered on the books for the current year. If we take the trial balance as shown on Exhibit 1 (which is the condition of the accounts exclusive of any adjusting or closing entries) and supplement it by the balances as shown in the trial proof on Exhibit 2, and to this result apply the profit and loss and other adjustments taken for the first year of the report ended March 31, 1919, as shown on Exhibit 1, it gives the trial balance as it should appear for the second year, March 31, 1920, exclusive of any adjusting or closing entries. (See Exhibit 2, pages 248 and 249).

This sheet is ruled and headed into sections as shown. As an additional check on the accuracy of the trial balance for the second year developed by Exhibit 2 this trial balance is developed again, but by a slightly different method, on Exhibit 3. Exhibit 1 is a working sheet for the first year's profit and loss statement and balance sheet. We now set up this balance sheet in the first section of Exhibit 3, as the starting condition for the second period. The total entries for the year taken from columns 5 and 10 of Exhibit 2 are entered in the second section and then added to the accounts in the first section. The difference in the sum of the two sections for each account forms the Trial Balance for March 31, 1920. From this trial balance we determine the condition of the Balance Sheet and Profit and Loss for the year ended March 31, 1920 thus completing the two years desired.

Any changes to be made for correction of errors in the debits and credits as disclosed by the credit, should be cared for by making a journal entry immediately, thus avoiding any chance of omitting them. (See Exhibit 3, page 251).

The journal entries are numbered, so that the adjustments made each year conforming to the period covered by the report, can be traced to the working sheets. These entries are made to the sheets as follows: Exhibit 1—Journal entries to adjust year ended March 31, 1919. Exhibit 3—Journal entries to adjust year ended March 31, 1920, and each entry both debit and credit on the sheet bears the journal number, thus giving a cross reference.

Warehousing accounts are different from those of other lines of business, as it is purely a renting and trucking proposition. The account "Receivable D. L. & W." is an advance expenditure made in behalf of the customer for goods received by the railroad company consigned to the customer. It is for storage and freight charges pending their transfer to the warehouse, such charges being paid by the storage company. This account is cleared by charging the customer on his storage bill each month for the advances made. On the balance sheet it is an asset of deferred receivables. There is no reason why the customer should not pay interest on these advances, but so far as the writer knows, this is not done by most warehousing companies. It may be that they consider such internal loss as an accommodation expense in connection with holding the patronage of the customer.

The account "Landlords Alterations and Improvements," is an asset of deferred expense charges which is to be absorbed

INDEPENDENT WAREHOUSE COMPANY, INC., NEW YORK

Final Working Sheet

Account	Balance Sheet March 31, 1919		Entries for the Year Ending March 31, 1920		Trial Balance March 31, 1920		Adjustments March 31, 1920				Balance Sheet March 31, 1920		Profit and Loss March 31, 1920	
	Assets	Liabilities	Debits	Credits	Debits	Credits	Debits		Credits		Assets	Liabilities	Expense	Revenue
Capital Stock "Issued"		$ 1,400.00				$ 1,400.00						$ 1,400.00		
Cash	$ 5,707.22		$104,904.02	$196,147.82	$ 4,463.42						$ 4,463.42			
Furniture and Fixtures	501.00				501.00		J 17	$83.30			584.30			
Cartage			18,388.08	18,713.12		325.04	J 19	325.04						$ 325.04
Equipment	595.58				595.58		J 17	809.20			1,404.78			
Expense			55,315.40	184.48	55,130.92		J 11-12, 13-15, 16-28	14,514.70	J 8-14, 14-19, 19-20	$69,645.62			$65,242.02	
Deposit	160.00				160.00				J 11	100.00	60.00			
Freight		2,924.18	77,826.90	80,102.50		5,199.78						5,199.78		
Unexpired Insurance	210.04				210.04		J 17	383.28	J 16	210.04	383.28			
Insurance			538.54	1,262.20		673.66	J 19	673.66						673.66
Labor			39,462.86	25,451.80	14,011.06		J 12	245.54	J 10-11, 20	14,256.60			1,567.66	
Acc'ts Rec. "D.L.&W."	25,002.28		166,354.98	144,508.64	46,848.62						46,848.62			
Acc'ts Payable									J 13	1,605.98		1,605.98		
Storage			4,722.08	77,687.46		72,965.38	J 13, J 19	1,285.44, 71,679.94						71,679.94
Notes Payable		32,208.00	1,000.00			31,208.00						31,208.00		
Accrued Pay-roll		98.94				98.94	J 10	98.94	J 12	345.54		345.54		
Interest and Discount			375.10	711.22		336.12	J 19	336.12						336.12
Taxes			30.18	905.70		875.52	J 19	875.52						875.52
F. J. Anderson		2,800.00	4,400.00	1,600.00										
T. Denison		4,400.00	4,400.00											
Res. for Depre.—Furn. and Fixtures		50.10				50.10			J 18	58.42		108.52		
Charles Francis		4,400.00	4,400.00											
Res. for Depreciation—Equipment		59.56				59.56			J 18	140.46		200.02		
S. Grant		4,400.00	4,400.00											
T. A. Morrison		4,400.00	4,400.00											
H. G. Smith		4,400.00	4,400.00											
Notes Receivable	1,550.22			1,550.22										
P. & L. Interim, Dr. & Cr.			318.42	64.16	254.26				J 20	254.26			254.26	
Acc'ts Rec.—Customers	43,954.44		73,554.16	110,351.40	7,157.20						7,157.20			
Landlord's Alteration and Improvement	8,696.62				8,696.62		J 14	3,097.82	J 15-18	965.24	10,829.20			
H. A. Wilson			800.00	800.00										
													$67,063.94	$73,890.28
Net Profit													6,826.34	
Surplus		24,836.02				24,836.02			J 21	6,826.34		31,662.96		
Total	$86,377.40	$86,377.40	$660,040.72	$660,040.72	$138,028.72	$138,028.72		$94,408.50		$94,408.50	$71,730.80	$71,730.80		

Exhibit 3

INDEPENDENT WAREHOUSE COMPANY, INC.
NEW YORK

Adjustments Journal Entries, Years Ended March 31, 1919–20

JE No.			
	March 31, 1919		
1	Expense Office Salaries	$ 4,940.00	
	To Labor		$ 4,940.00
	From former to latter accounts		
2	Expense Office Salaries	30.00	
	To Labor	68.94	
	To Accrued Pay-roll		98.94
	1 Day Portion Paid 4/5/19		
3	Landlord's Alteration and Improvement	7,670.20	
	To Expense		7,670.20
	From latter to former to set up advance expenditure		
4	Furniture and Fixtures	501.00	
	Equipment	595.58	
	Deposit account	160.00	
	Landlord's Alteration and Improvement	1,130.00	
	Cartage	1,040.00	
	Unex. Insurance	210.04	
	To Expense		3,636.62
	From latter to former accounts		
5	Expense Depreciation	109.66	
	To Res. for Depre. Furniture and Fixtures		50.10
	To Res. for Depre. Equipment		59.56
	10% written off		
6	Expense	103.58	
	To Landlord's Alteration and Improvement		103.58
	11/12 of 10% at $565		
7	Cartage	1,024.12	
	Labor	8,404.74	
	Storage	74,506.54	
	Taxes	241.58	
	To Profit and Loss		84,176.98
	To close		
8	Profit and Loss	59,340.36	
	To Expense		54,924.58
	Insurance		287.24
	Interest and Discount		247.84
	Sundries		3,880.70
	To close		
9	Profit and Loss	24,836.62	
	To Surplus		24,836.62
10	Accrued Pay-roll	98.94	
	To Expense—Office Salaries		30.00
	Labor		68.94
	To adjust. to year Mch. 31, 1920		
	March 31, 1920		
11	Expense—Office Salaries	9,420.00	
	Officers' Salaries	3,200.00	
	To Labor		12,620.00
	From latter to former accounts		
12	Expense—Office Salaries	100.00	
	Labor	245.54	
	To Accrued Pay-roll		345.54
	½ week paid 4/3/20		
13	Expense	320.54	
	Storage	1,285.44	
	To Accounts Payable		1,605.98
	As per schedule of invoices not posted		
14	Landlord's Alteration and Improvement	3,097.82	
	To Expense		3,097.82
	From latter to former accounts		
15	Expense	852.24	
	To Landlord's Alteration and Improvement		852.24
	1/9 of 3835 to yearly accrual		

Adjustments Journal Entries—*Continued*

JE No.	March 31, 1920		
16	Expense	$ 210.04	
	To Unex. Insurance		$ 210.04
	From latter to former accounts		
17	Furniture and Fixtures	83.80	
	Equipment	809.20	
	Unexpired Insurance	383.28	
	To Expense		1,275.78
	From latter to former accounts		
18	Expense	411.88	
	To Res. for Depre.—Furniture and Fixtures		58.42
	To Res. for Depre.—Equipment		140.46
	Landlord's Alteration and Improvement		113.00
	Deposit account		100.00
	To charge depreciation and to transfer		
19	Cartage	325.04	
	Insurance	673.66	
	Storage	71,679.94	
	Interest and Discount	336.12	
	Taxes	875.52	
	To Profit and Loss		73,890.28
	To close		
20	Profit and Loss	67,063.94	
	To Expense		65,242.02
	Labor		1,567.66
	Sundries		254.26
	To close		
21	Profit and Loss	6,826.34	
	To Surplus		6,826.34
	Net Profit transfer to latter account		

Exhibit 4

during the years covered by the leasehold.

Some storage companies have their own trucking equipment which would form part of the invested capital, but the one subject to this audit hired that service. The difference between the cost of hiring and the amount billed for this service to the customer is taken into profit and loss each period, as either expense or income. Labor handling the goods stored is treated similarly.

The capital stock comprised 250 shares authorized of no par value, of which 175 shares were issued, leaving the number unissued at 75 shares. They were sold at $8 per share, amounting to $1400 originally paid in.

There was no expense classification, all overhead being charged to a general expense account. This required it to be analyzed and redistributed according to the kind of expense involved, so that the statement of expense and income could be properly shown.

When making such an analysis the writer would suggest first that the amount of the voucher prefixed by its number be entered on a central amount column, and then distributed to columns by number in consecutive order to the right of the control column. The number is placed on the top of each column with the nature of the expense written under it. At the time each of these columns is set up make an index of "column numbers" and "expense titles" which is to be used as a guide in making the distribution. This will eliminate having to write the nature of the expense on all the sheets following the first. Only the numbers need be used if the analysis runs over several pages of work paper and the index can be discarded after one is familiar with it.

The total of the footing of each column of the distribution must equal the total of the control amount column, and the control amount column total must likewise equal the amount charged to General Expenses account on the ledger. When reconciled, this analysis can be further adjusted by transfer from one distribution column to another, by deduction in italics and adding in roman figures, thus giving a final corrected value as it is to be shown on the statement of income and expense and for which a transfer journal entry is made. (See Exhibit 4, pages 252 and 253).

INDEPENDENT WAREHOUSE COMPANY, INC.
NEW YORK

Comparative Balance Sheet

Showing Increases and Decreases of Assets and Liabilities

ASSETS	March 31, 1920			March 31, 1919			Changes Increases *Decreases
Current:							
Cash in bank		$ 4,463.42			$ 5,707.22		**$1,243.80*
Acc'ts Receivable, D. L. & W.	$46,848.62			$25,002.28			21,846.34
Acc'ts Receivable, Customers	7,157.20	54,005.82		43,954.44	68,956.72		**36,797.24*
Notes Receivable					1,550.22		**1,550.22*
Total			$58,409.24			$76,214.16	
Fixed:							
Furniture and Fixtures	584.30			501.00			
Less: Reserve for Depreciation	108.52	475.78		50.10	450.90		24.88
Equipment	1,404.78			595.58			
Less: Reserve for Depreciation	200.02	1,204.76		59.56	536.02		668.74
Total			1,680.54			986.92	
Deferred Charges:							
Landlord's Alt. and Impr'vmts		10,829.20			8,696.62		2,132.58
Unexpired Insurance		383.28			210.04		173.24
Deposits		60.00			160.00		**100.00*
Total			11,272.48			9,066.66	
Total Assets			71,422.26			86,267.74	**14,845.48*
LIABILITIES							
Current:							
Accts. Payable, D. L. & W.	5,199.78			2,924.18			2,275.60
Accts. Payable, Sundry Creditors	1,605.98	6,805.76		24,800.00	27,724.18		**23,194.02*
Notes Payable		31,208.00			32,208.00		**1,000.00*
Accrued Pay-roll		345.54			98.94		246.60
Total Liabilities			38,359.30			60,031.12	**21,671.82*
Excess of Assets over Liabilities			33,062.96			26,236.62	6,826.34
Represented by Capital Stock "Issued"		1,400.00			1,400.00		
Surplus March 31, 1919	24,836.62				24,836.62		
Net Profit, Year ended Mch. 31, 1920	6,826.34						
Total Surplus		31,662.96					
Net Worth		$33,062.96			$26,236.62		$ 6,826.34

Exhibit 5

INDEPENDENT WAREHOUSE COMPANY, INC.
NEW YORK

Comparative Statement of Profit and Loss

Showing Increases and Decreases of Income and Expenditure for Two Years Ended March 31, 1920

	March 31, 1920			March 31, 1919			Changes Increase *Decrease*
Gross Income:							
From Storage		$71,679.94			$74,506.54		*$2,826.60*
From Cartage		325.04			1,024.12		*699.08*
From Insurance		673.66					673.66
From Taxes		875.52			241.58		633.94
From Labor					8,404.74		*8,404.74*
Total Gross Income			$73,554.16			$84,176.98	*$10,622.82*
Cost of Operations:							
Rent: 175th St., N. Y. City	$14,400.00			$12,160.00			$2,240.00
Canal St., N. Y. City	4,200.00			3,150.00			1,050.00
Fulton St., B'klyn	12,800.00			9,599.94			3,200.06
Temporary	1,800.00	33,200.00			24,909.94		1,800.00
Stationery and Printing		451.04			1,295.70		*844.66*
Telephone and Telegraph		694.30			461.42		232.88
Supplies, Warehouse		132.44			117.42		15.02
Small Tools, Warehouse		9.20			23.46		*14.26*
Plumbing		195.00			375.00		*180.00*
Commissions		1,645.72			1,211.26		434.46
Carfares and Ferriages		37.56			25.76		11.80
Luncheons		75.00			135.60		*60.60*
Repairs		807.30			85.72		721.58
Postage		60.00			129.52		*69.52*
Insurance		875.94			921.40		*45.46*
Electric Light and Gas		457.36			291.62		165.64
Taxes		190.50			280.90		*90.40*
Watchmen Service		60.00			174.00		*114.00*
Landlord's Alt. and Impr'vmts.		1,352.46			891.74		460.72
Accounting and Legal Expense		694.92			347.70		347.22
Traveling Expense		516.74			333.98		182.76
Freight and Express		149.74			27.74		122.00
Miscellaneous		285.92			40.18		245.74
Officers' Salaries		13,600.00			18,000.00		*4,400.00*
Office Salaries		9,490.00			4,970.00		4,520.00
Advertising		62.00			52.00		10.00
Labor		1,567.66					1,567.66
Sundries		254.26			3,880.70		*3,626.44*
Depreciation		198.88			109.66		89.22
Total Operating Cost			67,063.94			59,092.52	7,971.42
Net Profit from Operations			6,490.22			25,084.46	*18,594.24*
Additions and Deductions Interest and Discount			336.12			*247.84*	583.96
Net Profit for Year Ended March 31, 1919 and 1920			$ 6,826.34			$24,836.62	*$18,010.28*

Exhibit 6

The report for an investigation of the affairs of a concern contemplating going into a consolidation usually consists of a balance sheet and statement of profit and loss for a period of two or more years, which should show increases and decreases for comparative purposes.

The tangible net assets of the prospective vendor should be shown on the balance sheet at a value fairly equal to what it would cost the vendor company to acquire by direct purchase in the market, plus a certain percentage for the value of good-will. The text of the report may include a commentary as regards the various adjustments which have been made, and an offer to consult further with the client should he wish it, and at his convenience.

The investigation in this instance was productive of the following information. The original capital invested was the cash received from the sale of 175 shares of capital stock of no par value at an agreed price of $8 per share, amounting to $1400, which formed part of a working capital of $5000, the balance being from bank loans.

The accumulation of net assets at the end of two years as shown by the surplus March 31, 1920, of $31,662.96 when divided by the amount of the original investment of $1400 shows that the average percentage earned in two years was as follows: Surplus earned in two years of $31,662.96 ÷ 2 = $15,831.48, the average yearly earning. The percentage for the first year then would be, $15,831.48 ÷ 1400 = 11.31%, and for the second year 15,831.48 ÷ (15,831.48 + 1400) = 90%.

The correct percentage earned on the actual capital used as shown by the increase in surplus each year was:

First year $24,836.62 ÷ 1400 = 17.74%
Second year $6826.34 ÷ (24,836.62 + 1400) = 26%

The shares at the end of March 31, 1920, are worth $33,062.96 ÷ 175 = $188.93 + each, an increase over their original cost in percentage of $180.93 ÷ $8 = 22.62%.
Proof—Surplus $31,662.96 ÷ $1400 = 22.62%.

As there were seven subscribers who paid $200 each, making the $1400 original stock investment, each holds 175 ÷ 7 = 25 shares. And $188.93 × 25 = $4723.25, each one's equity in the Net Worth March 31, 1920 of $33,062.96.

Table I

First. The gross income for 1919 was	$84,176.98		
Minus interest and Discount	247.84	$83,929.14	
The gross income for 1920 was	$73,554.16		
Plus interest and Discount	336.12	$73,890.28	
The Income of 1919 over 1920 was			$10,038.86
Second. The expenses for 1920 were		$67,063.94	
The expenses for 1919 were		59,092.52	
The expenses of 1920 over 1919 were			$7,971.42
which shows Profits of 1920 under 1919 of			$18,010.28

Table II

The income for 1919 was	$83,923.14	100%	
The expenses for 1919 were	59,092.52	70.41%	
The profit for 1919 was	$24,836.62		29.59%
The income for 1920 was	$73,890.28	100%	
The expenses for 1920 were	67,063.94	90.76%	
The profit for 1920 was	$6,826.34		9.24%
Increase in percentage of expenses to sales			20.35%

The two promoters of the business, A and B, were shareholders and were elected as officers of the company, therefore the two benefited as follows:

A's share of Net Worth . .	$ 4,723.25	
A's share of Salaries 2 yrs. .	15,800.00	
Total		$20,523.25
B's share of Net Worth . . .	$ 4,723.25	
B's share of Salaries 2 yrs. .	15,800.00	
Total		20,523.25
Total participation of both		$41,046.50

This shows that the percentage on the investment of each for two years was $4723.25 ÷ 200 = 23.62%, in addition to which they each received an annual salary of $15,800 ÷ 2 = $7900 which may be considered a pretty profitable undertaking.

By referring to the statement of profit and loss showing comparative increases and decreases we are enlightened as follows:

First. The Profits for 1919 were . . .	$24,836.62
Second. The Profits for 1920 were . .	6,826.34

The decrease for 1920 under 1919 being 18,010.28.

This fall off is shown in two sections as in Table I.

The effect in percentages using for the base Income at 100% is shown in Table II.

Showing a decrease in Profits 1920, of 18,010.28 ÷ 24,836.62 = 72.51%

Percentages must always be used with extreme care, and full consideration must be given to the facts and figures on which they are based.

MEETING LEGAL PROBLEMS IN BUSINESS

By Thomas Conyngton *

At the present time, the business men of the United States have probably to accommodate themselves to a greater volume of law than anywhere else on the civilized globe. There is first our ancient heritage of the common law and next the Constitution of the United States, and the many laws enacted by Congress that are shortly to be consolidated into a series of ponderous volumes. Then each particular state has its constitution and an ever-cumulating mass of statutes enacted by the state legislature. Beyond this again each municipality passes numerous ordinances on city matters, and multifarious boards and commissions without surcease issue rules and regulations that have the force of laws. It is an ineradicable superstition of the American people that any ill can be cured by the passage of a law to prohibit it. Hence the enormous output of our legislative bodies, the patent evidence of our numberless good intentions.

Whoever essays to do business must consider first what form of organization is most advantageous for his particular circumstances. This is the first legal problem in any new commercial undertaking. A man may go into business as an individual, but the advantage of teamwork and co-operation is so great that few outside of the professions ever do this. Nearly all successful business at this time is carried on under some form of organization that requires the joint efforts of two or more.

A partnership is the most ancient form of co-operative undertaking. Of late years for all sizable undertakings it has fallen into disuse, not to say disrepute, but there are still many large businesses carried on under this form. The banking firm of J. P. Morgan and Company is a notable example. It would be wise for any man going into business to consider very carefully whether with all its disadvantages in the way of partnership liabilities it may not be a better form of organization for his particular purpose than the corporation. A partnership has certain qualities of

* Member of the New York Bar; Author of "Corporate Organization and Management," "Partnership Relations," "Business Law," etc.

effectiveness which under some circumstances make it superior to every other form of business organization. During the investigation of the Steel Trust, Mr. Carnegie made the following statement:

> I don't believe that any corporation can manage a business like a partnership. When we were partners, I felt that we could run around corporations. You take thirty-five young men interested in watching even a leak in a spigot, and *no corporation can compete with such an organization in any business.*

The organization of a partnership is an interesting legal problem, and few business men know how effectively articles of copartnership can be drawn to meet the purposes of modern business.

The corporation, nevertheless, is the favored form of present-day business organization. The objections to it and the disadvantages of the corporate form are usually ignored. The corporation is an easy mark for those who lay taxes and it should not be forgotten that a corporation bears more than its fair share of public burdens; also that a corporation is not a citizen of the United States and has no rights, constitutional or otherwise, save such as are given it as a matter of comity outside of the state of its creation. In other states of the Union it must do business as a foreign corporation, and in each jurisdiction where it does business it is required to take out a license, to make reports and to pay taxes. Also to get the form of corporate organization best adapted to the particular business, protecting the interests of management and stockholders alike, and capable of expansion and increased capitalization if desired, is not a simple problem, and in few cases is it planned to secure the fullest effectiveness.

When the form of organization has been decided upon, it is prudent at the same time to make arrangements for the withdrawal or the death of the active members. In a partnership this should always be done in order to prevent injury to the business by the loss of the services and the withdrawal of the funds of any active member. In a corporation it may be done; and a provision made by a man's associates to buy his stock at a specified or calculable price in case of his death would, in many instances, be of advantage both to his family and to his business associates, making for both stability and permanence.

Any skilful insurance agent can suggest methods by which this may be effected by means of policies on the lives of the active members, the premiums to be paid as a regular charge upon the business. The insurance may be made payable to the organization on the death of the individual, or may be made payable to the personal representatives as a payment on account of the decedent's interest in the business.

In cases when insurance is not feasible, funds may perhaps be accumulated in approved investments, with an agreement that they are to be used when specified conditions arise.

In modern business operations certain laws apply so frequently that every business man should be familiar with their principles, just as he should know the fundamentals of accounting. Among these are the laws relating to contracts, sales, agency, and negotiable paper. Also the matter of bankruptcy comes up from time to time, and the credit man or someone else in every large concern doing a credit business should know what to do to protect his house when its debtors go into bankruptcy. Unless the amounts involved are considerable, it should not be necessary for him to employ counsel. The simple steps needed to secure a claim in case of bankruptcy can be taken by any reasonably well informed credit man.

In certain businesses those who are principals should know, in addition to this usual commercial law, the law pertaining to that particular line of business, and they should know it better, if anything, than the average lawyer. For example, a real estate dealer should know at least as well as the practicing lawyer, the details of transfer of title, the practice as to leases, the elements of title, and other aspects of real property law. The same is true as to the man engaged in selling insurance. A banker should not have to consult a lawyer as to any detail of the law relating to ordinary banking practice or to the handling of commercial paper. A manufac-

turer should be well informed on the common law and statutes relating to the safety of employees and to their compensation for injuries. There are many other lines where those who are principals should know with professional accuracy all the law relating to the particular business in which they are engaged.

Especially is all this true if the organization has much business with patents or trade-marks. In this case it will be necessary for some member to make a study of these subjects or to retain some lawyer especially skilled in this direction. It is to be expected that any trade-mark that becomes well known will be pirated and parties even more difficult to handle and unscrupulous in their ways will try to see how near they can come to using the successful trade-mark without passing over the line drawn by the law.

Every organization using a trade-mark name to identify a patented article or preparation should know that, when the patent expires, others can not only manufacture and sell the article or the preparation but can use the name that designates it. As soon as the original Edison patents expired, anyone could make phonographs and sell them as phonographs. If the first typewriter had been called simply a "typewriter" instead of a "Remington typewriter," the name would have been lost to the original makers when the patents expired. When the patent rights protecting linoleum expired, other manufacturers used the name to describe their own production. In a suit to enjoin this use of the name the court asked the plaintiff's attorney this question: "If he is not to call his goods *linoleum*, will you tell me what he is to call them?" It would be safer in all cases when a patented article is placed on the market to give a general name to the article and then use some special trade-mark solely as a prefix and not as an identification of the commodity itself, as for instance, King's linoleum.

At the present time, the varied problems presented by the many forms of taxation are not easy of solution. In a concern of any size, it is desirable that an accountant or other skilled assistant specialize in tax law for the benefit of the whole organization. Reference has already been made to the necessity for permanent organization and operation. Thus the local taxes on property may affect the location of both factory and offices. When branches are to be established, this question again requires a careful consideration.

When property is stored in a state or is held there on consignment, it is subject to local taxation in that state, and this though the owner has also to pay tax on the same property in the state where his business is domiciled. Double or even triple taxation is neither impossible nor illegal under our systems of overlapping laws.

The present federal income tax presents a series of problems, in which law and business both figure. In most of the profitable businesses of the country, as a consequence of the high federal tax on profits, expenses, and especially those that may tend to the future betterment of the business, have been increased beyond all ordinary bounds. Advertising has been prodigal; extensions, enlargements and plans for new business that may at some future time yield a profit have been encouraged. Reserves, sinking funds, and prudent financing have been discouraged.

The income tax law as a whole is clumsily drawn and our legislators are slow to correct faulty provisions. The provisions of the law must, of course, be complied with, but when keeping accounts, or organizing and operating a business in one way, entails an increased income tax over another way of keeping accounts or organizing and operating a business, and neither way comes into conflict with the law, it is the right of every business man to select the way that will be most profitable for him. Many specialists in taxation now earn a comfortable professional income from advising in tax matters and preparing tax reports.

When legal aid is needed, it should be secured as a matter of course. Some such occasions have been indicated. One rule should always be followed. If, when engaged in negotiating a matter of importance, one party is represented by counsel, the other party should likewise have the aid of counsel. The ethics of the

legal profession require that a lawyer shall always give his loyalty and allegiance to his client, that is, to the man who pays him. The simple faith that some business men display when they permit a lawyer, paid for by the other party, to prepare important papers without a careful and competent check-up of his work by some one acting in his interest, is an evidence of entire unfamiliarity with the ethics of the legal fraternity and the experience of many generations of business men.

In employing a lawyer it would be well to observe the following rules:

1. Be sure that your lawyer is a competent business adviser. Ability to pass a bar examination does not imply the experience, judgment, and skill required for safe and helpful advise when troublesome business problems are under consideration.

2. Retain your lawyer by the year and make the relation a permanent one if you can. A lawyer who has been connected with a business for years and is familiar with its policy and general conditions can always advise more intelligently than a stranger "picked up" for the occasion.

3. Remember that the lawyer by education and environment is inclined to be conservative not constructive. The doctrine of precedents in a way turns the mental viewpoint of the lawyer backward. This is why law as a science shows so little progress and is so slow to meet modern conditions. Dean Swift's sarcasm still holds, that "only in law is the fact that a thing has been once done wrong, a reason why it should always be done wrong." The average lawyer and judge are weak on principles, but love the "case on all fours," that relieves them both of responsibility and intellectual effort. On this account, do not expect your lawyer to devise any novel or improved form of business association or the indorsement of plans that involve procedure out of the beaten ruts. There is also this to be said in defence of the lawyer's position, that if he did choose to devise, say, an improvised plan of partnership organization, he would be held responsible if it did not work well. On the other hand, if he follows precedents and uses only the known and tried, he is safe. Also it must be borne in mind that if a better form of organization is devised and carried into effect the average lawyer does not hear of it till long after. Also contracts, agreements, and procedures that are skilfully devised rarely get into the courts, and the books of law only treat of cases and of litigated points. Hence, the cumbersome and antiquated forms so frequently encountered in business.

4. Pay your lawyer primarily to keep you out of litigation—not to fight cases, but to avoid the occasions for trouble. Litigation bears the same relation to business that war does to government—something that cannot always be avoided but when it does occur it is an evil involving losses and hindering progress. The difficulty here is that men are willing to pay handsome fees for the conduct of cases, but grudge even a moderate fee to the lawyer who advises negotiation or compromise. When this is the case, there is little encouragement for the lawyer who counsels peace. To avoid such conditions and for other obvious reasons it is better in any important business undertaking to employ your lawyer by the year and to make him a continuous business associate and counsellor.

REVIEWS OF BUSINESS BOOKS

PERSONNEL RELATIONS IN INDUSTRY

By A. M. Simons. xi, 341 pp.
The Ronald Press Company

REVIEWED BY SUMNER H. SLICHTER*

From the title one might infer that Mr. Simons' book is a discussion of the relations between capital and labor, an attempt to describe and explain them and perhaps to prescribe for them. Only the last is true. Mr. Simons' book is largely a description of approved personnel practice. It describes such methods of ameliorating the relations between capital and labor as come within the scope of personnel administration, but does not undertake to describe or explain the state of industrial relations nor to prescribe for them except to recommend personnel administration.

Of the three classes who are most interested in books on personnel administration—students of labor movements, technical personnel experts, and general business executives—Mr. Simons appears to have particularly in mind the general business executive. Although Mr. Simons' book will interest all three classes, it is primarily a business man's book. He treats personnel administration as a phase of managerial technique, an instrument for increasing output and lowering costs. It represents the latest wrinkle in managerial practice, the extension of science from the realm of the mechanical to that of the human, and its significance consists in its effects on output and costs. "The science of personnel relations," says Mr. Simons, "pleads this justification—that it aids production. It is maintained that the extension of scientific principles to human relations means an impetus to production comparable only to the application of power to machinery in the industrial revolution of the eighteenth century."

But the philosophically minded student of labor movements wonders whether personnel management has not a deeper significance than merely a method of increasing output and reducing costs. Is there not perhaps a struggle between capital and labor for the control of industry and may not personnel management be connected with this conflict? Does it not represent the enlistment by capital of expert scientific aid in the conflict with labor? What is the significance of this? Does it possibly constitute recognition of an important shift in economic power, a change of strategy to conform to new conditions? Instead of being merely an instrument of capital for maintaining, by means of labor's consent, a control over production which can no longer be maintained by economic pressure, is personnel administration perhaps also a device for protecting and maintaining the control of industry itself? Is it a back-fire against unionism, an attempt to forestall changes in industrial government by changes in managerial methods, to postpone democratic government by efficient management? Why did personnel management spring so suddenly into vogue when it did, and why during the last year have its popularity and the significance attached to it waned almost as rapidly as they rose? How are labor organizations and their relations with capital likely to be affected by an attempt of employers, aided by expert specialists, to compete with them for the good-will of the workers? And why do some labor organizations deliberately encourage the employment by business enterprises of these experts in the creation of good-will? On all of these questions of vital interest to students of labor, Mr. Simons, himself a keen student of social movements, must have ideas of

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interest and value. Mindful, however, that business executives are more interested in other aspects of personnel management, Mr. Simons undertakes no examination of these questions.

Nor is Mr. Simons' book addressed primarily to technical personnel experts. It does not undertake an exhaustive and technical treatment of the problems and practices of personnel management—it does not endeavor to tell in detail how to do this or that, to raise new issues, to examine minutely and question the soundness of advanced personnel methods, to suggest modifications and innovations, to make a contribution to personnel technique. Indeed, to compress into a single volume an exhaustive analysis of the problems and a critique of the practices of personnel management is no longer possible. The technical treatment of many subjects which form single chapters in Mr. Simons' book (such as "Mental and Trade Tests," "Interesting Labor in Industry," "Training," "The Wage Relation") would require separate volumes.

The general business executive, for whom Mr. Simons appears to have especially written, has two main interests in personnel administration. He wishes to know whether it is worth while to create a personnel department, or, if he has already established one, he wishes to know enough about personnel administration to judge whether or not this department is being conducted in an up-to-date and efficient manner. To give the business executive in a brief but accurate and discriminating manner enough information about personnel administration to enable him to answer these two major questions appears to have been Mr. Simons' purpose and he has accomplished it with substantial success. His style is clear, informal, and extremely readable. His point of view is broad and liberal but thoroughly practical. He is keenly conscious of the magnitude and difficulties of personnel problems and realizes that only by carefully formulated policies founded on frank recognition of realities can solutions be approached. He emphatically denounces the "physiognomy fakirs;" in discussing the problem of interesting labor in industry he warns against the hip-hurrah schemes of inspirationists who may arouse temporary enthusiasm by fine phrases; he points out the danger of faking in employee representation plans, quoting from Dr. W. M. Leiserson's noteworthy speech on this subject before the Industrial Relations Association. Mr. Simons is well aware of the things which matter to workmen and those which do not, and is emphatic in his insistence that personnel management concentrate upon the things which workers customarily regard as important. His treatment is necessarily brief and often extremely fragmentary but it is not superficial. His discussion is sprinkled through with shrewd and keen observations. To cite one of many, in discussing the efforts to interest men in their jobs by teaching them the significance and importance of their work and by causing them to feel a realization of the great industrial process in which they participate, he points out that such efforts are bound sooner or later to whet the men's desire for a share in the control of industry. To make men vividly aware of the process of which they are a part "is but to tantalize and aggravate their instinctive desire to share in that process." Occasional inaccuracies occur, as when he describes a national joint council in the men's clothing trade as actually in existence and says that the international joint conference council in the printing trade "governs" a certain portion of that industry. That there is a specialized "instinct to work" (page 116) is to be doubted.

A survey, moderate in length, of a subject so broad and so complicated as personnel administration is bound to contain important omissions. Nevertheless Mr. Simons devotes to secondary matters considerable space which might have been used for more important ones. Five pages are devoted to the nature of instincts and only slightly more than two to the specific discussion of the relationship of the instincts to industry, eight pages to the development of the Binet-Simon tests and less than four to the application of intelligence tests to industry. The important problem of the minor executive receives no attention except several pages in the chapter on "Training." Bonus systems are discussed

but no mention is made of the essential unfairness of quantity bonus systems due to the fact that they are so constructed that the worker by earning the bonus automatically cuts his average rate per piece. Hence the quantity bonus is an automatic rate-cutting device. From the standpoint of industrial good-will, this is of first importance. Mr. Simons emphasizes the close relationship between the personnel department and other departments and the need of co-ordination and co-operation, but gives no attention to the difficult problem of how this co-operation can be achieved. Especially important is co-operation between personnel and production departments for no personnel executive can long survive who is on hostile terms with the production department. Nevertheless its work not infrequently brings the personnel department into clashes with production officials —clashes which have cost more than one personnel manager his job and have impaired the standing of personnel work in many enterprises.

Fundamentally the reason for differences between personnel and production executives is that they interpret the interest of their employer by different tests. The production executive naturally tests the desirability of policies by their effect on output and costs. And because he is responsible for the movement of costs and output from week to week and month to month he inclines to take a short run point of view, to judge policies by their *immediate* effects on output and costs. The personnel executive, on the other hand, being responsible for good industrial relations, tends to judge the desirability of policies by their effect on good-will. Good-will in the long run increases output and decreases costs but often it can be preserved only by an immediate sacrifice of output or costs. To cut piece rates undoubtedly means an immediate saving but a piece rate-cutting policy usually induces limitation of output, and increases costs. Drive methods often result in immediate gains in output which, however, are likely to be lost by the killing of spontaneous co-operative spirit, by the repelling of the best men, and by greater turnover. Higher wages mean an immediate increase in costs, but a high wage policy is often the more economical. And finally, quite aside from its long run effects on output, good-will means security against labor troubles. Just as an engineer, in designing machines and structures, allows for a margin of safety, so, in handling men, sound policy may require the acceptance of avoidable costs in order to render good relations doubly secure. Because production executives, absorbed in maintaining production schedules, have difficulty in appreciating the more or less indirect, remote, and conjectural advantages of good industrial relations and fail often to see the desirability of liberal margins of safety, clashes occur.

What can be done to avoid friction and to create co-operation between production and personnel departments? Experience is too meager to give a very definite answer but indications are that a partial solution may be found in the joint determination of policies. Specialization of policy *execution* is undoubtedly desirable because it creates definite and undivided responsibility, but policy *determination* involves matters of joint interest, and decisions, therefore, should be made by representatives of all departments affected. On no other basis can co-operation be obtained. And this, be it noted, means not only that production executives participate in the determination of labor policies but also that personnel executives share in the determination of such production policies as affect personnel.

Mr. Simons characterizes the problem of restoring the elements of pleasure in production as "the biggest problem of personnel relations." The absence of labor's interest in industry "threatens the paralysis of industry, the destruction of skill, and the disruption of society."

The workers' lack of interest in their jobs is due, according to Mr. Simons, to deprivation of opportunity to plan their work, to absence of the elements of adventure in it, to lack of opportunity to grow with it, and to inability to visualize a completed product for which each is responsible. But there are other important causes. What of the social stigma which attaches particularly to the less skilled types of work, or of the belief, almost universal among workmen, that there is gross un-

fairness in the distribution of burdens and benefits in society and that the workers who do the heaviest, dirtiest, least interesting, and most disagreeable work, receive unreasonably small shares in the good things of life? They believe that they are already doing more than their share and feel entitled to seek compensation for the unattractiveness of their jobs and the meagerness of their pay by doing less and taking less pains.

Mr. Simons follows Mr. Wolfe in holding that a prime reason for men's lack of interest in their work is that they know so little about it and so inadequately appreciate the processes of which they are parts. But may the reason not also be that the average worker knows *too much* about his work and appreciates *too well* the process of which he is a part? No one appreciates better than he the fact that business is pursued for the sake of profit, that the men at the bench and the machine are working for some one's private gain, and that the more and the better work they do the larger this gain will be. The realization of these facts does not strengthen the workers' desire to increase the quantity or to improve the quality of their work. Why should stockholders, who possibly have never seen the plant, get more returns because some worker exerts himself more? The worker fails to see why they should and the knowledge that the increased value he creates by more or better work will go largely to swell dividends makes him averse to exerting himself.

In analyzing the reasons for the workers' lack of interest in their jobs it should be remembered that the sale of labor is a bargaining matter and that one does not drive the best bargain by delivering freely and without stint what one has to sell. Good bargains are driven by holding back and by delivering better quality or more quantity only in response to a price for it. Labor must conserve ability to deliver more output or better quality for use in future bargains. If it approach too closely the limit of its capacity, it may impair its ability to trade because it will have nothing more to offer. Unless the methods of selling labor are so modified as to give labor definite and automatic compensation for better quality or more output, labor cannot afford to be too much interested in its work.

It should also be remembered that the sale of labor is a competitive process and if one worker produces more or better work the management is likely to accept his accomplishment as the proper standard for the group. Hence, unless the workers observe restrictive standards, competition among them becomes unbearably intense. The removal of the tacit restrictive standards which exist in every shop depends upon the discovery of an effective alternative method for preventing cut-throat competition.

One is glad that, in his analysis of the workers' lack of interest in their jobs, Mr. Simons does not re-echo the cry, oft heard of late, that interest in the work must be created because, in the case of wage-earners at least, the dollar for some inexplicable reason has lost its motivating power. In the case of college professors the dollar, of course, retains its ancient lure and larger endowments are necessary lest the materialistically minded class which has supplied our scientists ceases to do so. But operators of punch press and boring mill, wielders of pick and shovel have suddenly become so non-materialistic that they refuse to exert themselves for mere dollars. Nothing less than love of the work will suffice.

Nevertheless the students of motivation are correct in their contention that during and following the war a distinct impairment of motivation did occur. But the motive which lost its strength was not the hope of reward. That motive, in fact, had little enough strength to lose among industrial workers for, due to the haphazard methods of granting promotion and wage increases, the piece rate cutting policy, and the drive system of management, rewards were too uncertain to exert much influence. The motive which temporarily lost its strength was not hope but fear—fear of losing the job. The results were especially serious because prevailing managerial systems relied so exclusively upon this motive. What industry now needs is not a substitute for the hope of reward but the introduction of pay and promotion strictly in accordance with merit in order to establish,

for the first time since the beginning of large scale industry, hope of reward as a really powerful and effective energizing force among wage-earners.

Perhaps the least satisfactory part of Mr. Simons' book is the four concluding chapters on joint management. The essential criticism of Mr. Simons' treatment of joint management is that he fails to address himself directly and systematically to the paramount issue—"Is joint management a good thing, and if so why, under what conditions, and to what extent?" Difficult or perhaps even impossible questions, it must be conceded, but nevertheless so vital as to be unescapable.

Mr. Simons believes that within the limited field of the regulation of conditions of light, heat, sanitation, and safety, and the operation of suggestion and training systems, joint management has demonstrated its practicability. Of more doubtful practicability, he believes, is the participation of the workers in administering discipline, and still more doubtful, from the management's standpoint, is the desirability of their participation in the determination of wages and hours. Scattered through Mr. Simons' discussion is material which throws considerable light on the desirability, from the standpoint of employers, of joint management in these doubtful fields. Mr. Simons points out the beneficial effect upon managerial efficiency of criticism of men and methods by shop committees and union representatives. In the absence of shop committees or unions, foremen can be inefficient in many ways without the management's knowledge. Joint management, as Mr. Simons explains, also forces executives to develop themselves into leaders of men. In the old days a foreman or superintendent did not have to be a leader because he could be a driver but when he is no longer allowed to drive, his only alternative is to be a leader. But although Mr. Simons throws considerable light on the desirability of joint management he does not address himself specifically and directly to that issue.

Of vital importance to the employers who contemplate experiments with joint management is the tendency of one form of joint management to evolve into other forms. Plans of so-called joint management may be divided into two classes. One type does not give and is not intended to give the workers a real voice in making decisions. It is intended merely to provide agencies of communication, to put the management in closer touch with its employees, to give it more complete and accurate information of their views, and also to provide means of reaching the workers, machinery by which the management can explain and "sell" its policies to them. The second type gives the workers, on paper at least, a voice in determining policies.

It may be granted that organizations which improve communication between men and management are *in themselves* advantageous to the management. But are such organizations likely to function indefinitely as mere agencies of communication? Sooner or later will they not provoke a demand by the workers for a real voice in making decisions? In seeking the advice of his employees, the employer concedes that their views are entitled to consideration. Encouraged by this concession will the workers consent to their views having merely the weight of *advice?* Will not giving advice, expressing views, merely whet their desire to participate in making decisions?

But is a shop organization which has a real voice in determining policies an advantage to the employer? Perhaps as long as he can dominate it by prestige and by superior ability to present his case, it is. But can he be sure of his ability permanently to dominate the organization? There are important differences of interest between employers and employees. And sooner or later will not these crop out and produce conflict? Then the management has two alternatives—either to compromise liberally or, by refusing, to sacrifice the good-will so laboriously created. And if a liberal compromise is refused, or obtained only with difficulty, is not the next logical step for the men to feel the need of a real union with strike funds, paid representatives, and national affiliations?

Such are some of the major problems which Mr. Simons' book discusses or suggests. All in all it is a book well repaying

study. Especially is it to be recommended to general business executives who desire a description of personnel management that is not too lengthy and is readable, thoughtful, and suggestive. And although the book is intentionally elementary, students of labor problems and technical personnel experts will find in it plenty of interesting material that is suggestive and thought provoking.

UNITED STATES STEEL

A Corporation With a Soul

By Arundell Cotter, of "The Wall Street Journal." 312 pp. Doubleday, Page and Company

Reviewed by Lieut.-Col. H. D. Emerson *

Mr. Cotter for more than ten years has been in daily touch with those who direct the destinies of the United States Steel Corporation. He is, therefore, in a position to speak authoritatively of their doings and their ideas. He has seen plans carried to completion, he has seen troubles met and overcome, and he has come to believe in the corporation and its management with the belief of full knowledge.

His first eight chapters are, as the result of his belief and because of the natural development of the story, as interesting and romantic as any novel ever written. If it had been issued with novelized names and slight change of scene it would rank above anything that Jules Verne or Wells or any of the other romanticists have ever written as a real man's story. As it is, it is an excellent history of one of the biggest and most successful industrial enterprises of history.

After the first eight chapters the reader has the feeling that Mr. Cotter has reverted to his ordinary technique of a writer for a financial paper using not only the facts that he has made his own but rewriting reports by others. It is fitting that Mr. Cotter who handles the daily doings of the Steel Corporation for *The Wall Street Journal*, one of the best and most reliable daily financial reviews of the world, should be the historian of the corporation.

It should also be noted that the facts as he sets them down completely answer such attacks as the amateur Interchurch "Report" and the more malicious I. W. W. propaganda. Mr. Cotter does not dignify these attacks by directly discussing them, but by his orderly and scientific display of causes and results and policies and successes does he put them out of the running. He is the trained reporter who marshals facts, and with but a single exception, his "A Corporation With a Soul" for a subtitle, does not verge on the editorial or argue the conclusion for his readers.

One outstanding fact he might have extended to editorial comment, and that is, that the corporation was and is so large that it dominates its officers. They did not and do not dominate it. It absorbed all the best of Mr. Carnegie, Mr. Morgan, Mr. Schwab, Judge Gary, Mr. Farrell, and a host of others, thus getting the best of each and as each was pre-eminent in his own line the result is the outstanding dominant success and superiority of the corporation.

Again its very size and the necessity of pulling together prevented internal jealousy and bickerings. Mr. Frick's attitude, or rather change of attitude, illustrates this point.

To those of us who at its birth wrote for the benefit of the financial public and who had doubts as to other than a speculative value for the common stock, to name one much discussed element, its complete success is more wonderful than to those who, like Mr. Cotter, came to know it in the last

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generation. We have seen hopes develop into realities and promises into performance.

Whether or no Judge Gary will be finally recorded as the outstanding figure in the corporation, and whether he will fail of a successor to fit his shoes, as did Harriman, Hill, and Spencer, only time can tell. Perhaps the machine is so well developed and its soul so thoroughly personified that there will be no need of a "successor." Perhaps "a motorman can run it." Certainly Gary's wisdom, foresight, and leadership made him the one who is responsible for the fine "color" of its soul.

Mr. Cotter's work is almost an industrial epic of interest for the business executive. It was needed and the man unknowingly trained ten long years for the job of composition. And this is a peculiarity of the corporation: Its men were all previously trained for their big jobs. Carnegie was trained for the big steel business and was ready when the Bessemer process arrived. Mr. Morgan was trained to finance and to cause to be organized, in the larger sense of management, large corporations; and passing over many, Judge Gary was being fitted for his part in the years preceding the normal and proper putting together of the units that made up the corporation.

But Mr. Cotter's book is not only a history of the steel corporation, it is a textbook and manual of modern industrial management.

It should have a proper and complete index. With an index, it can be used not only as a reference book but also as a textbook in all educational institutions where they prefer to teach facts and history rather than theories and dreams of the immature, the inexperienced, and the academic.

The volume, in short, is the history of dreams, by the greatest practical idealists the world ever knew, come true. To make the dream come true they had to be practical and democratic in the best sense of the word—the greatest good to the greatest number. And so the users of steel, the public, the makers of steel, the employees, and the owners of the corporation, the stockholders, have all greatly benefited.

And it was by holding constantly these three interests in mind and finely balancing their claims and necessities each against the other, that Judge Gary has won success and given the fine color to the soul of his corporation.

HUMAN ENGINEERING

By Eugene Wera, M.E., E.E. 378 pp. D. Appleton and Company

Reviewed by Harry Franklin Porter*

Mr. Wera has written a book well worth the close perusal of all those vitally interested in solving the problem of the more effective handling of personnel in industry. He has chosen to call his volume, "Human Engineering," because, as he sees it, the problem of obtaining a more effective contribution for production from the labor factor is fully as much one of social as of industrial engineering; in other words, labor must be treated as a social group.

He has arranged his material in four parts: (1) Psychological Evolution of Industry; (2) The Outlook; (3) Elements of Human Engineering; and (4) Applied Human Engineering. The first two parts are really introductory or background and will be passed over hurriedly by the average reader. They are, moreover, built up largely of quotations, the effect being not so much to strengthen the author's treatise but to divert his interest to the authorities quoted. Then, again, the same authority is quoted so frequently that it is disquieting. The impression would be better if the author had sketched his preliminary survey in his own language, utilizing excerpts from

* Consulting Industrial Engineer, New York City.

well-known authorities to substantiate his definitions. However, be that as it may, for the reader who wishes to brush up on the historical aspects of the labor problem, the first two parts may be scanned with profit.

In the last two parts, comprising a little more than half the volume, the author gets down to his subject in earnest and if he has made any contribution to the science of personnel administration it is here. His attempt to apply by analogy the laws and principles which govern the engineering of materials to the engineering of man-power is new, so far as known. Taking as his cue the conclusions of Professor Fouillée, in his book, *L'Evolution des Idèes-Forces*—"The laws of psychical equilibrium and movement seem to be the same as those of physical equilibrium and movement"—Mr. Wera proceeds to analyze the human forces which act and react upon one another to produce progress or retrogression as the case may be. He reduces these forces to five, viz: "Loyalty, motives, ideals, traditions, and interests"—which, he states, "must be present and properly related in order that progressive activity obtain."

Loyalty constitutes the fulcrum, against which swing the opposing force couples of progress and no-progress. Motives and Ideals make up the positive couple; Traditions and Resistances, the negative one. Normal progress results when adequate motives support proper ideals, and there is sufficient resistance in the established order to insure practicality at each stage. "A resistance, either physical or mental, is a condition of activity. . . . Although great resistance would make life impossible, an absolute state of ease is unthinkable and undesirable, for a life without resistance would make activity unnecessary and stop progress."

Interest, his fifth factor, may appear on the positive or negative side. If there is a conflict of interest in a given case, then interest augments the forces of resistance and progress is impeded or nullified. A mutuality of interest, on the other hand, lightens the weight of traditions and acts to increase the effectiveness of the Motives-Ideals couple, resulting in focused movement.

Next, the author proceeds to apply his theory to production, although as he states, it "applies as well to selling and advertising." He shows how by proper reorganization and by a systematic campaign of education in the shop, traditions may be corrected, resistances reduced, proper ideals or standards of thought and action set up and correct motivation of the working force secured. He lays particular stress on the value of works councils and workers' committees as a means to the end.

His idea is that these committees should be joint affairs of workmen, executives, and specialists in industrial engineering. From time to time, in each industry, there would be conventions of these committees, leading to the formation eventually of district councils, while for purposes of correlating the effort along scientific lines of all industrial groups, he would set up a national council composed of representatives of the district councils, engineering specialists with a broad general knowledge of industry, representatives of the banks as spokesmen for the capital factor, and public representatives designated by the government. "Such a board," he says, "will issue definite recommendations, or, as the case may be, propose standard rules and regulations enforcible upon individual concerns and groups of workers." Its main function, however, will be, by its influence on public opinion, to "prevent . . . any particular group from exercising unjust pressure upon others." The reader will see in this proposal of Mr. Wera's a similarity to the Whitely Councils inaugurated during the war period in England. In Chapter XVI, which the author devotes to a more detailed discussion of committee organization in industry, a fairly comprehensive outline of the committees believed necessary in a typical case is presented. The composition, function, and object of each committee are stated. This is valuable specific material for the manager who contemplates the adaptation of the committee system of co-operative management to his plant.

Mr. Wera discusses as Utopian the "idea of self-government springing from the bottom of society." "Such self-government," he declares, "would deteriorate industry." In this view he will find many supporters,

even among those who cleave stoutly to the tenets of democracy. A collectivity of workers is efficient only as it is well led. But the leadership must be based, not on authority but on superiority. The mass makes no progress, but "under proper leadership, the individuals composing a collectivity, can accomplish more than the same individuals separately. Animated by the spirit of the leader, they share his superiority."

Mr. Wera gives the impression of being a decided partisan of the committee idea as an essential to achieving proper industrial relations. From this view there will be frank dissent on the part of many who regard democracy as an attitude of mind, a conception of human relations not dependent for realization upon any particular form or system. In large plants, however, some definite means of contact between management and managed seems necessary if, on the one hand, the management is to keep thoroughly in touch with the human values in production, and on the other, the workers are to be kept in line with management policies and feel that they have an adequate voice in determining the conditions under which they labor. This is the function of the committee system. If the same result can be secured otherwise, so much the better; for committees are unwieldy instruments and wasteful of time.

In detail, the close reader will find a number of things with which to take exception. For instance, the statement on page 4, that "co-operation would be perfectly expressed if a man worked for his employer as he would work for himself in his own business." This ignores the fact of general experience that many persons are so constituted that they put forth their best efforts in the service of others, that the mass of men pine for leadership of the type to which they can surrender themselves whole-heartedly. Again, on page 11, speaking of primitive society, the author states that "there was no capital, no exchange, no division of labor," whereas, as a matter of fact, even in the family economy, capital existed in the form of crude tools and there was division of labor between the men and the women of the household, if not among the men outside. Again, on page 40, in discussing systematic as the intermediate between traditional and scientific management, he pronounces it deficient "because it ignores the individual as a human being and ignores his actual performance." There will be sharp dissent from this view. Further on (same page) he states, "although systematic organization is a real improvement in the technique of management, it fails to secure the good-will of employees." On the contrary, I have known of numerous plants in the systematic stage where unique good-will obtained. Scientific management does not result except as the management commands the respect and admiration of the workers.

Again, on page 104, he states: "Employees can share in profits only by becoming capitalists; that is, by buying stock. But profits, in the modern acceptance, are defined as the return to management, not capital, and in proportion as workers by their co-operativeness lighten the burden and expense of management, not, to say, occasion positive added profits, it would seem that they were entitled to participate in the profit-division. It is also pertinent to recall the origination of wages; they began as an advance payment against profits, consequently they cannot be regarded historically or scientifically as a final discharge of all the obligations to the labor factor.

Again, on page 233, speaking of the forces that swerve men to action, he states: "As to the producer, he labors not only to supply his wants, but also to satisfy his purely sentimental desires for self-expression." It seems scarcely sound to pronounce a divine dictate, which most certainly the desire for self-expression is, as purely sentimental. Nor will there be ready agreement with his statement on page 238 that "all our activities are governed primarily by an emotional process, that is, by sentimental logic, a logic which reason is unable to understand." It is true that most of us are creatures of impulse, nevertheless if experience has aught to teach us it is to control our emotions and to conform our conduct to reason—to what is economically, morally, and ethically right and proper.

From the standpoint of good English

and credit-usage, the author also exposes himself to some criticism. Paragraph after paragraph begins with the article "The" while the indefinite and baffling word "etc." dangles after many sentences. Then in quoting from authorities he sometimes uses the present and sometimes the past tense, while he takes liberties with names which must occasion a twinge of resentment on the part of those who are particular in this respect. For instance, Walter Dill Scott, President of Northwestern University and the author of several works on business psychology, from whom he quotes copiously and repeatedly, he refers to as "Professor W. D. Scott." He quotes several other professors, giving the title in each instance, except when quoting Professor Irving Fisher (page 257) to whom he gives no handle whatsoever.

Of course, none of these things are so very important in themselves; nevertheless they seem to prejudice the particular reader and thus increase his difficulty in estimating the book for its real worth—and real worth it undoubtedly has.

STATISTICS AND THEIR APPLICATION TO COMMERCE

By A. Lester Boddington, Fellow of the Royal Statistical Society and Fellow of the Royal Economic Society, London. H. Foulks Lynch and Company, Ltd. 17 Ironmonger Lane, Cheapside, E. C.

Reviewed by Hugh Mercer Blain*

The scientific statistician and the economic expert probably find little of practical value in this volume. For them there is little that is new either in subject matter or in the mode of treatment.

But such an assertion is no reflection upon the technical ability of Mr. Boddington. Prepared as a manual for business executives who might want to know the use of statistics in the machinery of scientific management the book is an admirable desk companion. It is free from technical jargon and academic and pedantic phrases. In his choice of illustrations the author is to be commended for his simplicity.

In his introductory chapter Mr. Boddington expresses his belief that scientific management is today the only hope of showing better profits either by an increase in the turnover or by a reduction in expense and an elimination of waste.

He lays a sure foundation for a later discussion by pointing out that statistics is the science of probabilities while accounting, another science of great importance to business executives, is an exact science. In his opinion successful business men are those whose estimates most closely approach accuracy.

He takes considerable pains to emphasize the fact that any information of a statistical character must be complete in all respects, if accurate inferences are to be obtained—a point to which repeated attention has been called by special articles in this magazine. Somewhat in detail he shows how essential it is that similiar data should be compiled on exactly the same line if the information is to be used for purposes of comparison. An obvious fallacy, of course, is to compare the profits of two years when the amount of working capital in the two periods is not the same.

In his chapter on "Compilation and Uses of Statistics," Mr. Boddington devotes considerable space to "Sampling"—a principle called by some statisticians "The Law of Statistical Regularity." Especially helpful to business executives is his discussion of the questionnaire as a means of obtaining data.

Attention is called to the careful consideration of the form of such questionnaire if the required result is to be obtained. To secure this, numerous practical suggestions are offered. The questions should be short,

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clear, and, most important of all, few in number. When the opinion of those addressed is sought, the question should be so worded that the majority will answer "Yes" or "No" without having to add specific qualifications.

In his chapter on "Accuracy and Approximation" the author calls attention to numerous policies and errors by so-called statistical experts.

The following quotation illustrates the policy in the use of percentages:

> Whenever percentages are used it is essential that the basis of the calculation of the percentage be given so that there can be no misunderstanding. In the following statement this has not been done, and consequently two results can be obtained from the data, but these results vary greatly:
>
> "Wages were raised 10 per cent, lowered 15 per cent, raised 25 per cent, and lowered 20 per cent, and then raised 15 per cent in certain years. What was the change in wages over the whole period?"
>
> What was the basis on which the percentages were calculated? Was it on the original wages or on the rate of wages ruling at the date the change was made?

By way of comment the author adds:

> It is not wise to trust always to percentages for comparative purposes, as the following little anecdote will amply demonstrate. Two Army Medical Officers were discussing the efficiency of inoculation against Typhoid, and one of them stated that of those patients he had inoculated, 50 per cent had subsequently contracted the disease. The other was much astonished at this statement, for, said he, "My experience is the reverse of yours, for of those cases which I inoculated only one-tenth of 1 per cent subsequently fell victims of the fever." The two opinions were so widely divergent that further inquiries were made, and it transpired that whereas the first medico had only inoculated two men, of whom one had subsequently sickened with the fever, the second officer had treated no fewer than 1,000 men, and only one of these had contracted disease. Apparently on the face of the statements they were capable of comparison since they were expressed as percentages, yet in reality no comparison was possible owing to the varying base of calculation. If ratios had been used, no misunderstanding would have been possible, since they would have been 1:2 and 1:1,000, these figures being obtained by reducing the actual numbers to the simplest form.

The author differentiates between "Mode" and "Average" as follows:

> It will be found in studying phenomena that generally speaking there will be items which are more numerous than others. Such predominant items are known in Statistical Science as the "Mode." When the "Average" man is spoken of we mean the type of man most frequently met with, and it would therefore be better in many ways to refer to him as the "Modal" man, rather than as the "Average" man.

He later adds:

> The Mode has so far not been used to any great extent in Commercial Statistics, but since it is the case which is most likely to be met with it should prove a reliable guide to what will happen when similar data are available, or work is to be done.

He points out, by way of example, that if time records be made of work done, a modal time will probably stand out and will represent the most likely time to be taken to execute a similar piece of work instead of an average time.

More and more those who control policies are finding that pictorial representation when properly carried out appeals not only to the eye but also to the mind of the executive because such representation is practical, clear, and easily understood, even if the executive is not familiar with the method of presentation.

The author gives the following illustration to emphasize this fact:

> A busy physician visiting patients in hospitals obtains a very easily-read clue to the progress and condition of his patient by a glance at the chart of the temperature which usually hangs at the head of each bed. This chart tells him the changes which have taken place since his last visit, and eliminates the necessity for inquiry as to what has happened in his absence. The wandering of a line is more powerful in its effect on the mind than a tabulated statement; it shows what is happening, and what is likely to take place, just as quickly as the eye is capable of working.

Obviously there is no reason why the executive, who is, in a certain sense, a physician of business, should not tell at a glance the condition of his enterprise by a glance at a similar chart or graph.

The different kinds of charts and graphs

are outlined in the chapter entitled "The Graphical Method." Such graphs vary from the simple to the more complex where the logarithmic scale is used.

The following general rules for constructing graphs conclude this chapter:

1. The general arrangement of the diagram should be from left to right.

2. Where possible, represent quantities as linear magnitudes, since areas and volumes are more likely to be misinterpreted.

3. For a curve the vertical scale, wherever practicable, should be so selected that the zero line will appear on the diagram.

4. If the zero line of the vertical scale will not normally appear on the curve diagram, the zero line should be shown by a horizontal break, or by making the base line of the diagram broken. The former method is, however, preferable.

5. The zero lines of the scales for a curve should be sharply distinguished from the other co-ordinate lines.

6. For curves having a scale representing percentages it is desirable to emphasize in some distinct manner the 100 per cent line, or other line used as the basis of comparison.

7. When the scale of a diagram has reference to dates, and the period represented is not a complete unit, it is better not to emphasise unduly the first and last ordinates, since such a diagram represents neither the beginning nor end of time. When the diagram is brought up to the previous year to that in which the diagram is constructed, the last ordinate should not be ruled in at all.

8. It is better that only those co-ordinate lines necessary to guide the eye when reading the diagram should be shown on the diagram.

9. It is advisable that the curve lines of the diagram should be very sharply ruled, so as to show the curves as distinct from other lines.

10. In curves representing a series of observations it is advisable, whenever possible, to indicate clearly on the diagram all the points representing the separate observations.

11. The horizontal scale for curves should usually read from left to right, and the vertical scale from the bottom to the top.

12. When curves are drawn on logarithmic co-ordinates the limiting lines of the diagram should each be at some power of ten on the logarithmic scale.

13. Figures for the scale of a diagram should be placed at the left and at the bottom, or along the respective axes.

14. It is often desirable to include in the diagram the numerical data or formulæ represented.

15. All lettering and figures on a diagram should be placed so as to be easily read from the base as the bottom, or from the right-hand edge as the bottom.

16. The title of a diagram should be made as clear and complete as possible. Sub-titles or descriptions should be added where necessary, in order to ensure clearness.

17. Where two or more curves are shown in the same diagram, they should be ruled in different colored inks, or varying types of lines.

While "Statistics and Their Application To Commerce" is intended only as a guide for business executives, the discussion of factory records seems a trifle scant in its treatment. Evidently the author is not familiar with the Graphic Control Boards used in many American factories to show where the factory stands in its production.

One of the most complete chapters, so far as subject matter is concerned, is the one which discusses "Index Numbers." Possibly this chapter can be read with profit not only by the scientific statistician but also by the economic expert, as it will show the index numbers used in England for the purposes of comparison. Especially helpful is the section on "Cost of Living Index Number," the method of comparison, which is reprinted by permission of the Controller of His Majesty's Stationery Office. Such a chapter supplements several of the special articles already printed in *Administration*, and gives the English point of view.

The concluding chapter of the book deals with published statistics and their use. Evidently government statistics are not any more highly thought of in England than they are in the United States. To quote from the opening paragraph of the chapter:

> Government Statistics—or those presented to the public by official or semi-official bodies—are open to serious criticism, since up till now there has been no uniformity in the compilation, calculation, tabulation or presentment of data, each Department collecting, recording and presenting the data independently and according to its own definitions. The Conference of the Government Officers engaged in dealing with Statistics in the British Empire, which was held in London early in 1920, should ensure greater uniformity, and thus greater reliability, than has previously been achieved.

The following exception is noted by Mr. Boddington as one which will hold true in America as well:

Probably the most scientifically prepared statistics compiled by a Government Department are those on Railway Working presented to the public monthly by the Ministry of Transport, some of which returns have been used to illustrate this book. By compiling statistics relating to such matters as the number of "Train-Miles" run by (a) Loaded Trains, (b) Empty Trains, and (c) Engines with only one or two brake vans attached, it can be ascertained whether the companies are utilising their Rolling Stock to the best advantage, for obviously if the ratio which the two latter bear to the former is high, traffic is not being planned economically, and there is a wastage of power and carrying capacity which in the case of a large railway may considerably affect its profit-earning capacity. The average wagon load shows whether trucks are being loaded to their full capacity, as if not there is again wastage, two or more wagons being used when one would do. In order that no unfair inference may be drawn when bulky but light goods are being carried, the goods are grouped into classes. The average Train Load will indicate whether the power of the locomotives is being used economically, for the expense of running a train lightly loaded will be approximately the same as when it is loaded to its fullest capacity. "Wagon-Miles per hour" supplies information as to the speed with which freight is moved, and a comparison between the figures obtained from the various companies will show at a glance which is the speediest route. "Train-Miles per Engine Hour" shows the actual work performed by the locomotives, and makes allowance for the time which is unproductive, such as preparing the engine for a run, and in moving it from the shed to the point at which the train will be coupled. "Ton-Miles" is the unit by which one can judge the freight-earning capacity of the Railway.

In no other enterprise have the units of comparison been so carefully worked out as in the organization and control of railways. By way of proof, attention may be called to the article on "Statistical Control of Railway Operations," by A. M. Sakolski in *Administration* for July.

In conclusion, Mr. Boddington emphasizes again the necessity of clearness of presentation and correctness of calculation in application of statistics to commerce. For clearness and correctness the book is to be especially commended. A careful perusal shows a remarkable freedom from error. One or two minor slips might be noted: on page 39 next to the last line, 100,000 should be 99,900. On the last line of this same page the figures should be reversed, 99,900 should be corrected to 100,000. On page 57, line 13, £15s should read £4.15. Such minor errors, however, are insignificant in comparison with the intrinsic worth of the volume which should have its place not only on the desk of the executive but also on the shelf of the plant library.

FEDERAL CORPORATE INCOME TAXES

By E. E. Rossmore, B.S., C.P.A., (N. Y.); Formerly, Chief of the Special Audit Section; Chief of the Consolidated Returns Section; Lecturer on Income and Profits Taxes; Bureau of Internal Revenue, Washington, D. C. xvi, 338 pp. Dodd, Mead & Company

Reviewed By Karl F. McMurry*

Federal income taxes of some sort are here to stay. As is the case with every new development in any branch of government much misunderstanding surrounds the operations of the first few years of the innovation. The shortcomings of the recent federal income tax laws, coupled with the general ignorance of the public not only upon tax matters but also upon principles of accounting which must be applied to business records before a correct income tax can be assessed, have resulted in a great deal of confusion in the minds of even our most thoughtful business men. The lack of authoritative court decisions upon many important points relative to income taxes, and the lack of experience upon the part of government officials in the administration of such laws have added to the difficulties. It is not to be wondered at that under

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these conditions many persons have assumed the attitude that the interests of the government and the interests of the taxpayers are opposed to each other. They have taken it for granted that the object of the government was to collect all the tax it could extort; therefore, the object of the taxpayer should be to report as little net income as possible.

It is fortunate that under these conditions a book, written by a disinterested person who has been on the inside of the Internal Revenue Bureau, should appear on the market.

As stated in the preface:

> The purpose of this work is to present the author's interpretation, based upon his knowledge and experience, of the Bureau's views and regulations.

The author has succeeded in presenting impartially the viewpoint of the government officials who handle the returns of income and otherwise administer the tax law. He impresses the reader with the fairness of the Bureau in determining upon the regulations to be enforced and the procedure to be followed. The reading of the work must promote a better understanding between the government income tax officials and the taxpayers.

The book is well written and easily read by one somewhat familiar with the Income Tax Law and Regulations 45. A person not acquainted with the Regulations would have to refer to them occasionally.

The scope of the book is limited to the more difficult points relating to corporation income taxes. In the language of the author:

> This book is not intended to treat fully or to cover the entire subject of Federal income and profits taxes. It is intended to supplement the regulations issued by the Treasury Department and the many works which have been written on the subject. The author has elaborated on those matters which are not fully covered in the regulations and concerning which he believes the public is not sufficiently informed.

There are six chapters, the first two of which describe the machinery and activities of the Bureau of Internal Revenue. The third chapter "Pertaining to Taxable Net Income," is the only portion of the book which deals with matters of more or less common knowledge among the larger taxpayers. Chapter IV, "Pertaining to Profits Tax Returns" is very technical. It deals chiefly with adjustments for invested capital and deductions from net income to determine the amount subject to tax.

Chapter V, "Pertaining to Special Provisions," treats of the "cushion" features of the Revenue Act of 1918. The special topics discussed are the following:

1. Consolidated Returns of Affiliated Corporations.
2. Assessment of Profits Tax by Comparison with Representative Concerns.
3. Nominal Capital and Personal Service Corporations.
4. Corporations Conducting Partly Personal Service Business.

These equity features of the law show the tendency of the government to deal justly with exceptional cases. The author's explanations regarding these are extremely clear. The difficult points are well illustrated so that a clear-cut impression is left upon the mind of the reader as to the Bureau's interpretations of these phases of the law.

Chapter VI is composed of the statement and solution of 47 problems which illustrate the methods of handling the more difficult points to be encountered in preparing corporation income tax returns. Each problem is in four parts:

1. A statement of the procedure or topics to be illustrated.
2. A statement of assumed facts to be used for the illustration.
3. The goal of the problem or a statement of what is wanted.
4. The solution.

The solutions are brief but complete, and clearly illustrate the points to be explained. Among the subjects illustrated by the problems are the following: War profits credits, methods of computing income and excess profits taxes for the years 1916 to 1918 inclusive, tax paid on income from tax-free covenant bonds, illustration of inadmissible assets in 1917 and 1918, disallowed interest, amortization deductions, claims for net loss in consolidated returns,

allowance for obsolescence of good-will, etc., in the case of liquor dealers, all adjustments to invested capital, adjustments of inter-company inventories, various types of consolidations.

The first three chapters, covering 94 pages, are well worth reading by every business man and can be understood by those who have not made a study of federal income taxes. However, it is doubtful if a novice in income taxes would find the last three chapters understandable without close study. On account of the technical matters of the last three chapters, accountants and others who have a great deal to do with the preparation of income tax returns will find the book profitable for reference.

The book has an important place in the literature on federal income taxes as it fills a distinct need.

BUSINESS WRITING

Edited by James Melvin Lee, Director of the Department of Journalism, New York University. xxii, 611 pp. The Ronald Press Company

Reviewed by Francis B. Frazee *

"Business Writing" edited by James Melvin Lee, the second volume in the series, "Language for Men of Affairs," sustains the high standard already set by the initial volume in this set. Mr. Lee himself, eminently fitted to edit such a book through his long experience as a journalist, has gathered to his aid the pens of such nationally known writers as John Mantle Clapp, Lecturer on Business English, School for Retail Selling of New York University, Edward Hall Gardner, Associate Professor of Business Administration of the University of Wisconsin, Sterling A. Leonard, Head of the Lincoln School of Columbia University, and other authorities.

Rarely is there a handbook on a subject of profound interest to the business man which so blends valuable information and genuine interest.

The post-graduate in business writing may read this volume with as much profit as the individual who has just taken up the subject as a beginner. As John Mantle Clapp so truly says in Chapter 1 of Part 1, "Essentials of Writing":

> Every executive is responsible for some of the writing of his concern. He must direct or appraise it if he does not produce it himself. If he does not know what he is about, his negligence may cost thousands of dollars.

Equally true it is that if such an executive will add to his library "Business Writing" and devote a certain portion of his leisure hours to its perusal, he will glean from it the most practical kind of helpful information and will find it, as well, a stimulant to that growth which means an enlarged ability and efficiency.

That the volume has been edited with imagination and vision is shown by the breadth and scope of the field it covers. One is taught not only how to write, but how to read as well.

Thomas Conyngton, author of "Business Law," inspires the readers of this book with a deeper appreciation of how good reading not only broadens one's life, but enlarges one's capacity in the world of business. A very valuable chapter in this section is the one devoted to "What to Read," giving little pen pictures of present-day magazines and the functions that they fill in the world of letters.

One might say equally as much for the practical value of other parts of this book, such as that devoted to, "Letters of Men of Affairs," by Edward Hall Gardner, and "Report Writing," by Ralph U. Fitting. It would require a glance at the sub-titles of the various chapters of this book to get some hint even of the exhaustive character of the contributions by these gentlemen to the volume.

* Editor of *Ourselves*, Employees' Magazine of the Larkin Company, Buffalo, New York.

Were the volume to contain nothing more than Part 5, "Advertising Copy," written by James Melvin Lee, the book would be indeed worthy of a place in any business library. Again and again one is asked where to lay one's hands on a book of advertising writing with the "layman" in mind. The average tome on the subject of advertising is so technical and so weighty that the novice hesitates to plunge in for fear of quickly getting beyond his depth. Mr. Lee, on the contrary, approaches his subject from the viewpoint of a journalist, and it is indeed a refreshing one. He has handled his subject with that "news" interest which not only awakes a keen interest in this subject with which every executive should be thoroughly familiar, but supplies him with a wealth of information that he can put into immediate practical use.

"Writing Copy for Consumers," "Knowing the Product," and "Good Copy," are some of the chapter headings in this portion of the volume, while samples of good advertising work are profusely supplied. Indeed, one must pause to speak here of the tremendous amount of illustrations and anecdotes, as well as quotations from well-known authors that are seen on almost every page of this volume of 600 pages. If teaching by parable is still the most accepted form and if incidents linger longer in memory, "Business Writing" is entitled to a special meed of praise. These stories and quotations are themselves to a great degree responsible for the breezy and unusual character of this extraordinary book.

Mr. Lee is also responsible for the sixth section of the book entitled, "The Journalism of Business." If it were possible, he is even more at home in this section than in that on "Advertising Copy." While all of the chapters are full of real meat that feeds the business writer, that devoted to the "House Organ" is particularly happy and timely.

In this day when direct mail advertising is assuming such tremendous importance, as well as the magazine edited primarily for building good-will among the employees of business houses, the house organ is coming to be one of the most important and highly regarded branches of advertising activity. The business writer will find on every page of this chapter nuggets of gold that spell greater efficiency.

The last section of this book is devoted to the "Mechanical and Incidental Phases of Business Writing." Herbert A. Wichelns tells of modern methods of getting the work done, handling proof, and compiling data and information.

BOOKS RECEIVED

Acceptances, Trade and Bankers'. By Park Mathewson. xiii, 372 pp. D. Appleton and Company.

Advertising The Technical Product. By Clifford Alexander Sloan, Vice-president, Campbell-Ewald Company, and James Davis Mooney, Vice-president's Staff of the General Motors Corporation. x, 365 pp. McGraw-Hill Book Company.

The High Costs of Strikes. By Marshall Olds. xx, 286 pp. G. P. Putnam's Sons.

Industrial Government. By John R. Commons and other Members of the Department of Economics, University of Wisconsin. xii, 425 pp. The Macmillan Company.

Principles of Economics. By F. M. Taylor, Professor of Economics in the University of Michigan. ix, 577 pp. The Ronald Press Company.

War-Time Strikes and Their Adjustment. By Alexander M. Bing. Introduction by Felix Alder. xi, 329 pp. E. P. Dutton and Company.

American Business Methods. By Floyd W. Parsons, Member of the American Institute of Mining and Metallurgical Engineers; Mining and Metallurgical Society of America; Academy of Political Science. ix, 373 pp. G. P. Putnam's Sons.

Storing, Its Economic Aspects and Proper Methods. By H. B. Twyford. xv, 200 pp. D. Van Nostrand.

Purchasing, Its Economic Aspects and Proper Methods. By H. B. Twyford. xvi, 236 pp. D. Van Nostrand.

Handbook of Church Advertising. By Francis H. Chase. 186 pp. The Abingdon Press.

REVIEWS OF BUSINESS PAMPHLETS

Cost Accounting for Retail Fuel Dealers. By William E. Cox, University of Washington, Seattle, Washington.

For this interesting and scholarly bulletin on cost accounting, Stephen Ivan Miller, Jr., Dean of the College of Business Administration at the University of Washington, has written a foreword which also deserves careful reading.

In his introduction Professor Cox shows the advantage of exchanging efficiency data as follows:

> A uniform system of accounting and cost-finding is very desirable. Competitors can lose nothing of value and they can gain much by comparing their results with the results of their neighbors. Comparisons cannot properly be made without uniformity of data. Delivery cost per unit is found by dividing the total cost of delivery by the number of units delivered. If the total cost of delivery is built up in different ways in different yards, if certain expenses are placed in the delivery group in one yard and omitted in another, if the delivery units are not alike, the results are useless for comparative purposes. Leaks and inefficiency can sometimes be found only by comparing results with those of another dealer. If the delivery cost per ton of one dealer is more than that of another dealer, there must be some reason for this difference. One dealer may deliver with teams and another with trucks. One form of equipment may be more efficient and economical than the other. One dealer may unload his coal into a gravity-bunker, another by elevating machinery, and another by shoveling by hand. One may save a considerable amount compared with the cost of his neighbor. On the other hand, the one whose cost of unloading is least, may break his coal so badly in handling that he loses as much from breakage as he saves in unloading. Men cannot be said to know their business unless they know these things, and they cannot be known without some method of comparison. No trade secret is lost, no advantage is yielded, by exchanging efficiency data with another engaged in the same line of work. And this becomes assured if such exchange data pass through capable and disinterested hands, which hand back only the material results without communicating the source of the original data.

Briefly, the business described in this bulletin is divided into two departments, Coal Department and Wood Department. The cost of shrinkage, unloading, and delivery is kept separate from the start.

A suggested skeleton, useful not only for retail fuel dealers, but also for other dealers, is one of the attractions of this pamphlet. It is to be commended for its thoroughness. This skeleton of ledger account groupings is followed with a discussion of these accounts with detailed explanations.

The pamphlet concludes with several pages of exhibits and forms used in cost accounting.

While prepared especially for retail fuel dealers, the pamphlet should be helpful to cost accountants in other lines. It may be obtained gratis upon application to the College of Business Administration, University of Washington, Seattle, Washington.

Five Hundred Business Books. Compiled by Ethel Cleland, Business Branch of Indianapolis Public Library. Third Edition, Revised by Jessica Hopkins. Published by the American Library Association. Chicago, Ill.

> The modern industrial worker is a user of print; that is the outstanding fact which the present day flood of books in industry sets plainly before us. And daily the industrial worker reads more and more; and daily the habit of using print to his profit goes further down the line, from president and manager to superintendent, foreman, expert workman, and day laborer.

These words from the Introduction by John Cotton Dana, Librarian of the Newark Public Library, may serve as a text for this list of 500 useful business books. Each book is listed by author in main groups. The title, date of publication, publisher, and price, are also given, and then a sentence or two classifying and describing the book so that the business reader can judge of its usefulness for his purposes.

Some idea of the number and variety of modern business books is given by the main divisions. The first is Business—General, under which are placed such subjects as: Ethics; Psychology; Personal Efficiency; Economics; Law; Purchasing, Credits and Collections; Corporations. The other main

divisions each with similar subdivisions are: Commerce; Finance; Bookkeeping, Accounting, and Auditing; Factory Organization and Management; Office Practice; Advertising; Salesmanship; Retail Trade and Special Lines; Insurance.

The general principles in this list were well stated in the preface by the original compiler:

> The particular test for the inclusion of books in this list has been that of their proved practical value to younger business men. This does not imply . . . that the list is not meant as well for business men of wide experience, nor . . . that the principles and theories underlying general business and its various ramifications have been ignored. . . . Whenever possible, the best books elucidating the basic theory of that particular phase of business have been included. But it has been discovered in actual daily work in a business library that the book which is most in demand and which is most often returned with the comment "That is exactly what I wanted," is the book which deals not so much with the theory itself as with the operation of the theory, not so much with the psychology as with the practical application of the psychological principles to the specific problem, not so much with the plan as with the tested plan. Business men are as willing as any other group of men to learn from the experiences of others.

Hints on Export Translations. By Alexander McQueen, Foreign Trade Department, Fifth-Third National Bank, with a Foreword by Dean Herman Schneider, University of Cincinnati. The Fifth-Third National Bank, Cincinnati, Ohio.

In the language of the foreword, this little volume has been prepared as a working chart for those embarking on foreign trade. Its use, according to Dean Schneider, will save many a cargo, and its suggestions as to further study will prevent the wrecking of developing opportunities. In other words, it is to point out the most common and inexcusable blunders that creep into the foreign correspondence of the business executive.

The first slip to which Mr. McQueen calls attention is the assumption that similar looking words mean the same in foreign languages as they do in English. That such is not the case is proved by a study of the following words chosen at random from the vocabularies:

Foreign word	*Does not usually mean*	*It often means*
atestar (Sp.)	to attest	to cram, to overstock
disgracia (Sp.)	disgrace	accident, misfortune
obligations (Fr.)	obligations	bonds (commercial)
raison social (Fr.)	social reason	firm name, company name
calma (Port.)	calm	heat, sultriness

The author lists the following items of information one should want to gather from a letter in a foreign tongue:

1. The writer's name
2. His complete address
3. His business or profession, if any
4. His probable financial standing
5. The exact meaning of his communication

He points out that in foreign trade correspondence the envelope with its postage stamp and its post-mark is an essential part of the communication and should be pinned to the letter until the answer has been dictated. The reason is that important foreign letters frequently are written on stationery designed for domestic uses and often omit the name of the country. Because of great duplication of town names in Latin countries the postage stamp may be the only indication of the writer's country.

He gives the following rules for translating hard words:

1. Is it the case of a word being spelled by sound?

Phonetic spelling, designed or unintentional, is common in writing the languages now being studied; particularly in Spanish. For example, *jerente* is sometimes written instead of *gerente*. See "Substitutions of Letters," below.

2. Is it some form of a verb?

In Spanish, for instance, *den* will only be found in a conjugation of the verb *dar*, to give. If you do not know the verbs in all their forms, consult one of the verb books.

3. Is it a Spanish or Portuguese word ending in *a*?

If so, look in the dictionary for similar word ending in *o;* the *a* ending may merely indicate

the feminine, which latter is sometimes not recorded separately.

4. Does it contain the letters *ch, ll,* or *ñ?*

When consulting Spanish dictionaries, remember that *ch, ll,* and *ñ* are classed as distinct consonants. The same is true of *ch* in Portuguese dictionaries. Example: The word *galon* in a Spanish dictionary will not be found after the word *gallon,* but before it.

5. Is it a case of confounding single and double consonants?

In an average week's correspondence, you are likely to encounter several cases of words spelled with one consonant instead of two, or vice versa. Example: In Portuguese, *apetecer* instead of *appetecer.* Such combinations as *pp, tt, ff, ss,* are often reduced to single letters; and the reverse is sometimes true.

6. Is it a word coined recently?

If it is a newly invented word, its meaning is often apparent after a moment's study. For instance, the new Spanish word *matamosca* is derived from *matar,* to kill, and *mosca,* fly, and makes an excellent translation of "flyswatter."

7. Is it a modern technical term?

Perhaps it can be found in the advertising pages of one of the American export magazines printed in several languages; or in one of the valuable government publications.

8. Is it borrowed from another similar language?

In a letter from Brazil, for instance, you may encounter a word not listed in your Portuguese dictionary, but easily identifiable upon reference to a Spanish or French dictionary. Such borrowing is a common occurrence in modern commercial correspondence in all languages.

9. Is it an idiomatic combination of noun and adjective?

When translating unfamiliar combinations of nouns and adjectives, always look in your dictionary for the noun first. If the expression is one of frequent occurrence, you will probably find what you need listed as a variant of the noun. In Spanish, for example, *pequena velocidad,* translated by taking the adjective first, would mean "little speed;" the correct rendering, however, is "freight" as distinguished from *gran velocidad,* which stands for "express." Such definitions are more likely to be recorded under the noun than under the adjective.

10. Is there any doubt as to its being a noun or an adjective?

Constant care is necessary to distinguish nouns and adjectives. A person with a smattering of Spanish, for instance, may be tempted to render *este inconveniente* by "is convenient," whereas the correct translation is "this obstacle," or "this difficulty."

11. Is it an abbreviation?

Some abbreviations, entirely familiar to foreigners, are not listed even in "good" dictionaries. Only a very few are recorded in this little book. Others may often be found in larger dictionaries printed entirely in the foreign languages.

12. Is it a typist's error?

Very likely the typist struck the wrong letter; this happens in foreign countries just as often as in the United States. For example, *juestro* for *nuestro.* Consult your own stenographer for hints as to which letters are most often substituted in this manner.

13. Is it the illegible name of a town, city or state?

Lists of states and principal towns in Latin American countries are contained in the valuable work by Ernst B. Filsinger.

14. Is it an illegible name or street address?

Directories of the principal foreign cities are available on the shelves of some of our public libraries; and in Cincinnati at the Foreign Trade Department of the Fifth-Third National Bank.

15. Is it a word or expression indicating money, weight, or measure?

A "dollar" may mean anything from 1¢ to $1.03. There are six or seven different weights represented by the word *libra, pount.* The word *vara* is not an exact equivalent for our "yard;" its meaning varies according to nationality of the person using it.

16. Is it in a dictionary of the English language?

As a last resort, reference can be made to a modern American dictionary, such as Webster's. English is very rich in technical and other terms borrowed from foreign languages, and sometimes such dictionaries will record a foreign word even before it has appeared in the dictionaries of its own country.

One of the most valuable features of this volume is its illustrative vocabulary of the words most commonly employed in trade letters written in Spanish, French, or Portuguese, and its Appendix giving abbreviations of words commonly used in the correspondence of the three languages already mentioned.

The booklet has been carefully compiled and for those who have charge of foreign

trade correspondence it will be a helpful manual to have on the desk. It may be obtained free upon application to The Fifth-Third National Bank, 14 West Fourth St., Cincinnati, Ohio.

Wanted: A Correspondent—Salary $15,000 a Year. By C. R. Gillson, Hampshire Paper Company, South Hadley Falls, Mass.

Those who have charge of correspondence will find this pamphlet interesting reading at the close of the day's work.

Letters that are of the rubber stamp variety are contrasted with those written in news form. The formal presentation is dramatized fact in the shape of a personal interview with the president of a large manufacturing concern. The mechanical form in which the pamphlet is produced is rather striking.

Letter of The Federal Trade Commission. Government Printing Office, Washington, D. C.

This official publication is printed in answer to the inquiry of the President of the United States as to whether the Federal Trade Commission is in possession of information indicating that there has been a readjustment of prices, and whether this be the fact that such reduction is reflected by the manufacturer and has been projected through the various stages of progress of commodities from producer to consumer.

The pamphlet is divided in three parts. The first deals with the present conditions; the second, with causes; the third, with suggested remedies.

The pamphlet concludes with the following:

> It should be said in conclusion that following the disordered condition of the world's affairs, a shrinkage in values is inevitable and that normal conditions will be the more quickly restored if the producer, the laborer, the manufacturer, the jobber and the retailer will each share at once in the unavoidable loss, and further that any effort by any element to place its share of the common loss on the shoulders of others, and particularly of the consumer, can but result in a continuation of the conditions under which the country is now suffering.
>
> The analysis indicates that the cost of living must come down as a prerequisite to normal business, and that the first move should be in the reduction of retail prices, accompanied by such credit assistance as will prevent any undue financial disorder. The first object should be to increase rather than lessen the purchasing power of the ordinary consumer. This will afford an immediate and double relief to the agricultural producer.

A Method of Distributing Factory Pay-roll. By Matthew Porosky, National Association of Cost Accountants, 130 West 42 Street, New York City.

Various methods are used in the accounting for labor in the plant and in the pay-roll office. This pamphlet describes one method of distributing pay-roll in a factory which makes special electrical apparatus to a large extent. It also deals with one method of absorbing the pay-roll in the cost of the product.

In the words of its writer the system of recording labor costs should accomplish the following checks and precautions:

> 1. To prevent the company from paying more or less than had actually been earned by any employee.
>
> 2. To distribute money paid, over those departments in which the expense had actually been incurred, and also against the proper work orders, thereby enabling the management to determine the cost of direct and indirect labor in any department, and also for each order and class of product.
>
> 3. To provide the mechanism for fully absorbing the entire pay-roll in the cost of the product.

He divides labor into three classes: office help, direct labor, and indirect labor, respectively, and states the bases of compensation for each class.

He advocates the use of "in" and "out" clocks for the recording of the time workers enter and leave the plant. The time that the workers are in the plant as indicated by the tapes removed from these clocks is checked against the time that the workers are employed in the shop as indicated by their time cards. Sample time cards are shown. Each employee, he says, should make his own time clock registrations. Checks to insure that this is done are provided. The writer mentions two of these checks.

The clerical routine followed after a wage

rate for a worker has been established is outlined. Some of the forms used in this connection are reproduced. The columnar arrangement of a pay-roll sheet is also mentioned. The clerical procedure when wage rates are changed and when workers quit or are discharged is briefly mentioned.

Day and piecework labor reported on individual work time cards is charged to two classes of "associated work orders," namely, (1) production, assembly, and equipment orders, and (2) indirect labor orders.

The various steps in the handling of time cards are discussed.

The problem of accounting for transfer or loaned labor—that is, labor that is transferred temporarily from one department to another when no burden charge is involved —is always more or less perplexing. On this point Mr. Porosky has the following to say:

> With the method of issuing time cards which has been described—one for each man and one for each job—it is possible to overcome the more or less perplexing problem of accounting for labor temporarily transferred from one department to another. In such cases the employee reports his time on separate time cards from each department. That is, if he has worked on two jobs in department A, he will report on two time cards from department A, one for each job. Upon his transfer to department B, he will report on as many time cards bearing that department designation, as there were jobs worked on. The employee retains the same key number, and it is therefore impossible for him to receive duplicate compensation. The time cards, when assorted by key numbers by departments and by job order numbers, as explained in this article, permit of accurate checking with the time clock tapes for the payroll, for the distribution of labor departmentally, and for the costing of the individual orders. The same methods apply when the employee is assigned to indirect labor tasks. In these cases the worker reports his time under the indirect labor order numbers, and for the department in which he has been employed. By this method, it is not necessary to provide any special transfer slips or reports whenever a worker is temporarily transferred from one department to another. Furthermore, it is possible to follow a single standardized method for reporting direct and indirect labor returns.

Some other matters discussed in the pamphlet are overtime tickets, employees' pass tickets, value of automatic time stamps, posting of time cards to work orders, distribution of office pay-roll, and piecework. The control of piecework performance and earnings is treated somewhat in detail, with particular emphasis on the records which provides the necessary information for determining the efficiency of any worker, for determining the accuracy of piecework rates, and for determining the best, poorest, and average performances of the workers.

Another interesting record discussed with a sample form shown is the Cost Summary Card, which is kept for each piece of work to show not only the actual material labor and overhead costs by departments, but also the number of hours spent on the completed quantity of work. To quote:

> This record is useful for comparisons and time studies. It shows a standard time and cost value for each department. These values are determined by computation and analysis of previous records kept for the piece, or on similar pieces. This "standard," so-called, is used as a measure to determine whether or not any individual cost is excessive. Whenever there is any radical excess cost, or where there is a materially lower cost than previously reported, the differences are investigated, and possible remedies or corrections are made. In this way even the day work records are checked, the excess costs being brought to the attention of the foreman or to the head of the department who is responsible, and permanent remedies are applied. Sometimes the difference is due to a poor worker, poor tools, inefficient methods, or hard castings. In every case, however, a remedy is sought and subsequent orders are watched to see that the remedies are actually applied.

The booklet closes with a discussion of labor statistics vital to successful factory management and control.

Foremen and Accident Prevention. The Travelers Insurance Company, Hartford, Connecticut.

In its preface this booklet states that it is based upon the extensive experience of The Travelers Insurance Company in practical accident-prevention work.

> We are therefore confident that it will be welcomed not only by superintendents and foremen, but also by owners and operators of industrial plants and by all other employers of labor.

The "Relation of the Foreman to the

Employee" is tabulated in detailed paragraphs in alphabetic form—a really unique scheme. In other words the safety rules which should be strictly adhered to by both foreman and employee are listed alphabetically—each item explained fully before the next item is touched upon.

"Self-preservation is nature's first law, and it should also be, without question, the first law of the workplace," comments the author of the pamphlet.

Under the heading "Artifical Respiration" are covered all data necessary when an employee is saved from drowning, electric shock, etc. The action of pulmotors is treated briefly.

The practice of "Blasting" is described in detail: its use, operation, and the relief given to operatives in case of accident. In the same manner, down the industrial alphabet, are covered the prevention—and cure—of injuries incurred by steam apparatus, blood poisoning, chemicals, chipping, construction work, electrical apparatus, elevators, hoisting machinery, ladders, etc.

An invaluable little book, it should be on the desk—or better still, in the pocket of every foreman or manager of an industrial plant.

It is tersely written in clear, simple English and printed on slightly cream-colored paper with good black type. The captions are in double-face type so that they stand out boldly.

Because the various items are arranged alphabetically, they can be found immediately without the necessity of thumbing through the book, and in case of emergency the little booklet can be referred to with ease and facility.

Industrial Posture and Seating. Prepared by The Bureau of Women in Industry. State of New York Department of Labor. Special Bulletin. Albany, N. Y.

The foreword in this business pamphlet is delivered by Frances Perkins, Commissioner of New York State Industrial Commission.

"In this present study," says Miss Perkins earnestly, "no stone has been left unturned to discover the best that human ingenuity has devised in the way of industrial seating. The relation of posture to health and efficiency has been treated with great care, and I believe with real wisdom."

The pamphlet is divided into two parts. Part 1 is headed "Posture in Industry," and it treats fatigue and posture, variation in posture, what good posture is, and the effects of bad posture.

Part II is headed "Seating in Industry." It emphasizes the relationship of parts to the workplace. Such phases of the workplace as chairs for work, material of chair seat, size and shape of chair seat, adjustment, back, foot rest, bench, handling supplies, are described in detail. Attempts to standardize seating in industry are explained briefly in the simple language of the layman.

The book is lavishly illustrated with cuts, photographs and diagrams. In the beginning of the pamphlet are listed the names of various industrial concerns who have contributed illustrations and examples of the seating plan in their plants. Fifty-one in all are listed and include the seating facilities of the New York Telephone Company, Cluett, Peabody Company, Joseph and Feiss Company, Dennison Manufacturing Company, Pilgrim Steam Laundry, S. S. White Dental Manufacturing Company, Westinghouse Electric Company, Standard Printing Company, etc.

Under "Conclusions and Recommendations," placed rather arbitrarily in the front of the pamphlet, the conclusions reached by the report are:

1. That posture must be varied. Continuous sitting and continuous standing are both harmful. Ideally, conditions should allow the worker to vary his position at will, because of the rest and the enormous saving of energy that comes from a change of position during working hours.

2. That work conditions should be such that correct posture is possible, by providing a physiologically good chair, and by insuring a proper relationship of the different parts of the workplace.

3. There is no one chair that is best for all industrial processes. To determine what chair is best for a particular process, the nature of the work to be done, the position of supplies and finished work, the equipment at hand, i.e., the height of bench, chair, place for foot rest, etc., as well as the height of the individual worker—all these must be considered. To provide a good chair is not enough; the important thing is to bring all parts of the workplace into the best possible relationship.

CHRONICLE AND COMMENT

CONTRACT CANCELLATIONS

The subject of cancellations is the most vital topic discussed at business gatherings. To many business men contracts seem to be considered as mere "scraps of paper."

Some business houses which have cancelled contracts insist that they have only been doing what the manufacturers did when the tables were turned. They assert that contracts were not considered sacred and manufacturers did not hesitate to break them when higher prices for goods could be obtained elsewhere.

Several hopeful signs have recently been noticed. In some sections a compromise has been reached. The seller has agreed to a cancellation providing that the buyer would pay for actual losses incurred.

"SALES TAX PLAN"

Editor of Administration:

An article entitled "Sales Tax Plan" appeared in the June issue of your publication.

It is particularly noted that Mr. Gray, an accountant from Boston, believes he is quite justified in criticizing *Administration* for publishing articles opposed to the sales tax plan, and his own pet ideas. He apparently forgets to realize that there may be many readers on the other side of the fence.

Like many others he fails to provide or offer a workable and equitable substitute for our "profits plan" of collecting taxes. All he says, or all he probably can say, is that a sales tax is determinable.

Even at that, in practice, the sales tax may be somewhat difficult of administration. Is it not true that sales records are ofttimes poorly or inaccurately kept, and can correct sales be very easily determined and substantiated under such conditions? Further than that, would there not be a tendency to understate sales, or to treat them in a manner that would reduce them to the lowest possible amount?

It has been no simple matter to effect collection of our comparatively small monthly excise taxes, the Internal Revenue Department tells us.

Too many business men, some thoughtlessly, feel prone to criticize our present tax laws, simply because they have been and are being called upon to pay their just share—to pay a just share of the profits the government has allowed them to earn, to help run our government. They seemingly fail to realize that if they had not made such large sums of money, they would not have had to pay so large a tax.

Taking these same people at the present time, when profits are apt to be smaller—a thing to be hoped for, rather than a reality—how many would willingly pay taxes based on sales, when their business operations as a whole, for a period, showed a loss?

"Why not pass taxes on to the consumer?" is quoted by many advocates of the sales tax plan. Under any plan the consumer pays, so why confine it to the sales tax plan exclusively, or call it a remarkable point to be gained by adopting the sales tax plan.

It is admitted that our present tax rates are high. Our excess profits and high surtax provisions were a financial necessity, and as such we may even call them "wise" taxes. While large governmental expenditures are in vogue, high tax rates are a logical means of obtaining needed revenue.

A proper substitute for our present laws and rates are uniform normal tax rates based on *net profits*, with rates sufficiently high to raise the necessary revenue, from this source, but no higher, as excessive revenue might tend to induce extravagance. Lower surtax rates should also be introduced. The writer favors a maximum rate of 35 per cent.

Mr. Gray implies that a considerable amount of "workless work" is occasioned or has been occasioned under existing laws.

Is it really a difficult matter to prepare proper federal income and profits tax returns under existing laws if the corporation's or firm's books are accurately kept, arithmetically and in principle? Does not a large part of the extra work that has been incurred trace itself to faulty and inefficient record-keeping?

Business men as a whole have improved

their accounting methods and records in the past few years out of necessity, but did it not have a wholesome effect? Has it not developed a keener understanding of the value of accounting records by business men generally? The claim that our present tax laws have created a lot of red-tape and useless work is, in truth, unfounded. Businesses are, however, required to keep proper records.

In conclusion, giving proper and due consideration to sales tax proposals the "profits plan" of raising federal revenue appears to be the best plan thus far advanced. The question of equitable rates concerns us more than the discarding of it, as being unfair and difficult of properly administering. We might emphasize our conclusions in this wise:

"He who profits most, can pay best."

Yours very truly,
(Signed) F. J. Munchalfen.
Oshkosh, Wis.

INDUSTRIAL NURSES CLUB

That New York has recognized the necessity of the nurse in industry as a definite labor and money saving requisite is illustrated by the extent and variety of industries represented by members of the New York Industrial Nurses Club. Banks, insurance companies, public utilities, mercantile establishments, manufacturing concerns, theaters, hotels, shipping interests, all are represented. The New York Industrial Nurses Club was organized in Nov. 1920.

LABOR COSTS

Germany can today put a ton of steel in England at a price $20 a ton cheaper than what it costs England to make it, says Charles M. Schwab. Furthermore, he continues, Germany is today selling pneumatic tools in Detroit where formerly we made such machinery and shipped it to Germany to sell there cheaper than she could make it.

"The difference is solely a matter of labor costs," says *Bindery Talk*, house-organ of Gane Brothers and Lane.

Mr. Schwab in his reprinted article believes that railroad costs must come down and it is in the interests of national prosperity that our government, acting through the Railroad Labor Board and every other agency, shall reduce railroad wages and bring costs down to a living point.

"In so far as our people in America are prepared to go to work at reasonable wages, in so far as we are prepared quickly to abandon the artificial extravagances of the war, will we lay the foundations for a new prosperity such as we have never enjoyed before," concludes the article in *Bindery Talk*.

BUYING BY BUDGET

"I date whatever success I have made," said a well-known merchant recently, "from the time when I first applied the budget system to my personal expenditures." *The Marshall Bed Post* published by The Marshall Ventilated Mattress Company, quoting the personal experience of the merchant, says that this man, when a traveling salesman at a nominal salary, was forced to ration himself financially in order to live within his income. Applying the budget system to his personal expenses has made him apply it to his business.

One of the surest means of reducing losses sustained through slow-selling lines is to put a store or each department of a store on a buying allowance. With only limited funds at his disposal, the buyer will be more apt to exercise the maximum of care in all his purchases, and will be less inclined to listen to the siren songs of clever salesmen. After buying his more or less staple lines, he will go to unusual trouble to invest the remainder of his allowance so as to secure the greatest possible return on his money.

The problem is, How can a budget system for a retail store be devised which will meet all requirements? To fix a yearly sum to be invested in new stock is arbitrary; something more elastic is required to meet the varying seasonal demands. On the other hand, a system too elastic is in danger of being "no system at all."

The author's suggestion is as follows:

From the month's sales during a year, deduct that month's expenses. You then have the extreme amount which can be paid during that month for merchandise. From this sum, it is advisable to take whatever reasonable amount you figure upon as your net profits.

Starting the season, it is, of course, advisable to fix upon a period of time for which you will purchase merchandise in advance. In years past, four to six months was rather the common rule. With staple lines, this still obtains; but with novelty goods and some general lines, the time is as short as thirty to sixty days, depending on the distance the retailer is from the market. Having the store departmentized enables the merchant to adjust his buying for different departments.

This process is continued before merchandise is bought for every season. If the store's stock of merchandise of the last preceding inventory was too large to show a satisfactory rate of turnover, it is a very simple matter, says the author, to figure just how much it should be reduced throughout the year.

METHODS OF SELLING

Selling to the world is accomplished, broadly speaking, in four ways. The *Helix* lists these ways as follows:

(1) Commission and Export Merchants (2) Manufacturers' Agents (3) Foreign Representatives and (4) direct selling by mail or a firm's own salesmen.

A commission merchant is one who has his office in two or more countries and each office buys and sells the materials its clients need.

A manufacturers' agent is an organization devoted to selling certain goods in certain countries. The foreign representative or branch office tends to equal, or actually is, a branch of the home concern. Direct selling to other countries is essentially similar to domestic selling. Advertisements and letters secure inquiries which are turned into orders through catalogues, circulars, special correspondence, and by the calls of salesmen operating direct from the home office.

Commenting on the best location for an export office, *The Helix* reads, in part, as follows:

Where the factories are located away from a large seaport, there arises at once the question of the most desirable location for the export office. It has been most universally decided that the sacrifice of direct contact with shipping information, issuers of marine insurance, and intimate connections with the offices of the commission merchants and large exporters, is over-balanced by close touch with the factory, ability to care directly for the customers' interests and general knowledge of policy from day to day.

The foreign correspondence of a concern is the producer of all that follows in export work. Letters from foreign countries usually arrive in large groups and are immediately translated either in the main office or are sent to expert translators.

"One of the greatest sources of annoyance to people in other countries," says *The Helix*, "is the receipt of underpaid mail. One does not like to pay double the amount due (a system largely used in several countries) to get a circular of no interest. This is equally true of real letters. To guard against domestic postage being used in the mail room, different shape envelopes should be used for the oversea correspondence."

The Helix, published monthly, continues the discussion of foreign trade, under the head "Selling to the World" in successive numbers so that its readers, employees of the Greenfield Tap and Die Corporation may be informed of the policy of the company in its foreign trade relations.

ABSENTEEISM

In editorial language, *Home Spun Yarns*, house-organ of the Mohawk Valley Cap Factory, comments sagely on the practice of "Monday morning absentees."

The employees of the Mohawk Valley Cap Factory are well taken care of and enjoy a great many privileges at the expense of the Management. But on the other hand there is a "duty" incumbent upon these employees that is a sacred obligation. In the first place we are expected to render a fair day's pay, and next, to work every day on the job except when sickness or the unforseen makes absence a necessity.

Absenteeism in a prosperous country like America is a curse; it is a cancerous growth in the great laboring class that must be checked before it is too late. Its effect upon production has been so marked that the High Cost of Living, born in the war period, has flourished and waxed stronger since the termination of hostilities, and there can be no relief in sight until every man decides to stick to his job.

The habitual absentee is a nuisance, not only to the concern that employs him but also to his

fellow workers. Men who work on a piece-work basis suffer from his spasmodic attendance, while the routine of conscientious time-workers is constantly disturbed. It is high time for the habitual absentee to wake up and mend his ways for the day is not far away when he must pay the penalty; he will be "cast out into the exterior darkness" as a discard justly blackballed from the industry.

PROMOTING EFFICIENCY

Announcement is made in *The Edison Round Table*, a magazine published Saturdays for all employees of the Commonwealth Edison Company of Chicago that two prizes of one share each of Edison stock will be awarded this year for the best papers on the subject "Efficiency In My Own Department." One prize is awarded for the best essay submitted by a woman, and the other for the best essay submitted by a man. Last year the prize was a trip to Pasadena, California.

THE PLANT LIBRARY

Two pamphlets on the maintenance of plant libraries have already been reviewed in the columns of *Administration*. To supplement the contents of these pamphlets, the following description of the library at the plant of E. F. Houghton and Company in Philadelphia is taken from the official magazine of that corporation, *The Houghton Line:*

Our Library may or may not be similar to other plant or industrial libraries. I cannot say, for I am not up on that subject.

Undoubtedly, however, its basic principle is like that of other efficient libraries, because our Library was installed by Miss M. Stella Heim, a professional librarian (meaning that she is a graduate in a special course in library work) formerly associated with the Free Library of Philadelphia.

As I understand it, the courses that fit one for the profession of librarian teach mostly classification and cross indexing. These are the rudimentary branches of library work, for, when a person wants something out of a library, "he wants what he wants when he wants it," and a properly conducted library must be able to render up-to-the-minute service. Otherwise it is an expense instead of an economy.

Perhaps, if I go a little further into detail, I may aid you in establishing a similar library, or perhaps you may aid us in improving ours.

The Houghton Library could perhaps be more accurately described if its title was: "The Houghton Library and Information Bureau," for the major portion of the service it renders is in furnishing information.

The Library does a great work in employees' welfare and education. During the lunch hour and before and after office hours the Library is thronged with the younger members of the employed force, particularly the office girls, seeking the lighter literature and the educational literature kept on its shelves.

The work incident to the conduct of our Library is done by three individuals; only two, however, devoting their entire time to the Library work.

First in the trio is Miss M. Stella Heim, Head Librarian. Miss Heim installed the Library and is its executive and advisory head.

Inasmuch, however, as Miss Heim is also Private Secretary to the President, she devotes but a small portion of her time to the Library.

Next is the Assistant Librarian, Miss Eleanore Sullivan, also a trained Librarian from the Free Library. The third is a young woman assistant.

In addition, there is the Library Committee, of which Miss Heim is chairwoman and which is composed of the executives who have, or whose departments have, the most use for the Library.

The Library Committee meets at the call of the chair, for discussion of Library subjects and to act in an advisory capacity to the Librarian.

Like the country lad who comes to town to work and must be satisfied at first with a hall bedroom, our Library is yet so young that it has not separate quarters of its own. Separate quarters are coming to it, however. It now occupies the hall room leading from the Accounting to the Executive Offices.

I can imagine the "conservatives" among my readers criticizing the Library idea on the grounds of the expense involved and classing it as an extravagance. I can imagine other readers being confused and befuddled with the thought that the Library requires a lot of system and red tape.

Let me inform both that our Library is a demonstrated economy and that it is simplicity itself (far simpler and less complicated than the usual method of obtaining the information it furnishes).

Many concerns suffer loss from the ignorance of their employees and the employees are ignorant because there is no ready method by which they can become informed.

Many concerns suffer loss because their employees are vicious through reading improper literature.

The plant library reduces those losses.

Calculating the saving in the time of high salaried executives at amounts ranging from $2 to $10 per hour, in hunting up this information, our Library pays a profit of about 500 per cent. In other words, it would cost our Company five times more to have its high salaried executives look up the information themselves and through outside channels.

In saving time the Library fully pays for itself.

In lessening the amount of misinformation, the Library pays for itself many times over.

In enabling the Purchasing Department to invite competition, by furnishing the Purchasing Department with information as to the sources of supply for all products requisitioned, the Library pays for itself many times over.

In reading the technical publications that have relation to our business and in calling the attention of executives and department heads thereto, the Library saves much in high salaried executives' time, and besides furnishes far more information of value than the executives could otherwise obtain.

In furnishing the executives with information on the rulings of Government departments, decisions of the courts, successes or failures of competitors, new competitive products, new processes of manufacture, new raw materials, new sources for supplies, the Library does a work whose value is incalculable.

The person who criticizes the Houghton Library as a useless extravagance is merely ignorant of good business principles. The Houghton Library is simply a well systematized method of doing things that must be done for the success of the business, and doing them at the lowest possible cost.

The reader should not imagine that the Houghton Library vies with any of the public libraries in magnitude or effort. It has its own special field and does not stray beyond, nor desire to.

Its nucleus consisted of the books (mostly technical) that were scattered here, there and everywhere around our plant and in the possession of individuals, though Company property. Their scattered condition made them difficult to consult when occasion arose, and besides that, the existence of some of them and their presence in the plant was unknown to many who might have used them to advantage. In a number of instances, the books were kept at the homes of executives and employees.

With these books assembled in our infant Library, the Librarian was able to ascertain what books and other literature was required for an adequate plant library for E. F. Houghton and Company. This data was compiled by consulting lists of the literature published on the subjects involved, securing suggestions and information from executives and employees and discussing this information in committee meeting.

A moderate appropriation for book purchase was made by the Board of Directors. This appropriation has been included in each annual budget of the Company and it has never been exceeded.

In purchasing books preference is given to technical publications pertaining to oils, greases and leathers and the practical use of the same. In this respect, we are in a position to know that our Library is the best equipped in the world.

The technical part of our Library not only enables us to substantiate our knowledge of our own business, but it enables us to learn all the other fellows know, if we so desire. It enables a new and inexperienced man coming into our Organization to make rapid strides in mastering the technology of our business.

A number of our executives and employees have turned over to our Library many books from their private libraries, for the reason that they desire these books where they may readily consult them in the course of their daily work and that others in the Organization may have the same advantage.

SELLING BY SIGHT

The Bulletin of Lindeke, Warner and Sons declares that a big department store has found that out of every 100 customers 87 per cent will buy the attraction on sight —including goods on display (whether in the windows, on counters, or in show cases) and those to which their attention is called by advertising or demonstrations; 7 per cent by the attraction of sound; 3.5 per cent by the attraction of touch, and 1 per cent by the attraction of taste.

GIVING YOURSELF A JOB

"If you were the boss," asks *The Stanolind Record* of the employees of the Standard Oil Company in Indiana, "and if you applied to yourself for a job, would you get it?"

Just be a boss for a few minutes, urges *The Record* then check up your record for the past month as an employee.

Remember, now it's your money to meet the pay-roll, warns the writer.

Have you, as an employee, filled your hours with productive, conscientious labor, or have you been busy watching the clock? Have you produced enough in that month to make you a profitable investment?

Have you put your shoulder to the wheel, forgotten petty differences and difficulties, or have you put sand in your bearings? Have you asked questions and improved, or have you been too wise to learn?

Have you analyzed what you are doing and why, or used instinct instead of reason and got an indifferent and methodless result? Have you allowed your mind to become poisoned with anger, worry, or envy, and by so doing contaminated and reduced the efficiency of others?

Have you gone through the month, a vision of pay-day the oasis in your desert of work, and have you let this vision shut out from view all else in the day's work that would build you to size where you would give yourself a job?

Or have you put heart and soul in the work, on the job every minute with a breadth of vision that made the desert of work an oasis of opportunity?

Would you give yourself a job? queries the author.

14 POINTS OF ACCOUNTING

Vulcan Bulletin, published in the interest of the Gas Fraternity of the Wm. M. Crane Company, reprints 14 points in accounting practice, formulated by the Retail Grocers' Association.

1. Charge interest on the net amount of your total investment at the beginning of your business year, exclusive of real estate.
2. Charge rental on real estate or buildings owned by you and used in your business at a rate equal to that which you would receive if renting or leasing it to others.
3. Charge in addition to what you pay for hired help an amount equal to what your services would be worth to others; also treat in like manner the services of any member of your family employed in the business not on the regular payroll.
4. Charge depreciation on all goods carried over on which you may have to make a less price because of the change in style, damage, or other cause.
5. Charge depreciation on buildings, tools, fixtures or anything else suffering from age or wear and tear.
6. Charge amounts donated; of subscriptions paid.
7. Charge all fixed expense such as taxes, insurance, water, lights, fuel, etc.
8. Charge all incidental expenses, such as drayage, postage, office supplies, delivery expense of horses and wagons, telegrams and telephones, advertising, canvassing, etc.
9. Charge losses of every character, including goods stolen or sent out and not charged, allowance made all customers, all debts, etc.
10. Charge collection expense not enumerated above.
11. When you have ascertained what the sum of all the foregoing items amounts to, prove it by your books, and you will have your total expense for the year.
12. Divide this figure into the total of your sales and it will show you the percentage of cost to you to do business.
13. Take this figure and deduct it from the price of any article you have sold, then subtract from the remainder what it cost you (invoice price and freight) and the result will show your net profit or loss on the article.
14. Go over the selling prices of the various articles you handle and see where you stand as to profits; then get busy in putting your selling figures on a profitable basis and talk it over with your competitor as well.

EMPLOYEES' MAGAZINES

1921 marks the first anniversary of 13 of the 17 house-organs of the International Harvester Companies. *The Harvester World* outlines the growth of the employees' magazines as follows:

Each magazine is published under the direction of the works council's publicity committee, functioning through a local editor with whom the editor in the general office co-operates.

In the beginning prizes for names of the various magazines were offered. Suggestions poured in by the hundreds. The accomplishing of the purpose for which the magazines are published is sought by promoting acquaintance, friendship, and a spirit of pull-together among the employees of the plant, and by informing the employees of the company's plans, policies, and achievements. The employees themselves write 95 per cent of the material.

The magazines familiarize the employees with other departments in their particular plants and portray the spirit of the organization—the relationship of production and sales, and the necessity of maintaining top-grade quality. The readers learn more about their jobs, their company, and fellow workmen, all of which makes them better workers and better citizens and helps them to develop a capacity for getting more out of their industrial life.

Each of the company's 17 magazines has its hobby and each affords an outlet for the lively spirit of competition.

ADMINISTRATION

The Journal of Business Analysis and Control

SEPTEMBER, 1921

INDUSTRY AND THE ENGINEER

BY JOHN HAYS HAMMOND *

RECONSTRUCTION in the devastated countries of Europe demands the work of trained engineers of all kinds. Consideration of the difficult economic and business problems which confront these nations has led them to realize that manufacturing must be greatly increased. In France, new textile mills, sugar plants, rubber, and automobile factories are being built.

All this work requires mechanical as well as civil engineers. The mechanical engineer must constantly keep pace with his brothers in other fields, and every new development of theirs exacts new requirements from him.

The manufacture of such new substances as synthetic rubber, the making of dyes and drugs which the war has made necessary in America, has created opportunities for the chemical engineer.

Examples could be multiplied far beyond the limits of this article. Our material civilization, the product of a few intensely active years, has made America entirely dependent on the engineer. Our activity is largely industrial, and the greatness of our industry is due to the abundance of our resources and the perfection of our machinery for utilizing them. Even in those parts of the world given over to agriculture the engineer has penetrated with machinery to speed the work, with devices to save labor and eliminate waste, with railroads to transport the produce of the farm.

If we eliminate any one of the engineering elements which underlie our present civilization, the entire structure collapses. Let us suppose, for instance, that the mining engineer is suddenly removed. The most immediate effect would be the lack of fuel for our manufacture and commerce. Machinery could no longer be made, because there would be no metal. The use of electricity would cease, because there would be no copper. Education which depends on printing, literature, the arts, all the luxuries and conveniences and most of the necessities of life would come abruptly to an end, and we should be plunged immediately into the darkness of the stone age.

Take away the civil engineer and you prevent the construction of railroads, waterways, roads, buildings, the development of our cities. All transportation by land is directly dependent on

* Formerly President of the American Institute of Mining Engineers; Joint Author, with Jeremiah Whipple Jenks, of "Great American Issues" reviewed by Royal J. Davis in *Administration* for July, 1921.

him. Without this transportation the population of the world would starve. The present condition of starvation found in some of the European nations is due more to the abrupt interruption of transportation by the war than to any other single factor.

The dependence of the constantly increasing population of the world on machine-made products has made the work of the mechanical engineer indispensable. Agriculture, the manufacture of clothing, the preparation of food, must be carried on on an enormous scale to keep pace with the increase of population. In order that this work may not drop behind, every effort of the mechanical genius is necessary in the constant perfection of efficient, labor-saving, rapid machinery.

Our means of communication throughout the world, on which, as much as on any other element, the structure of our present civilization is built, would cease to exist without the work of the electrical engineer, as well as our lighting, heating, power, much of our transportation, the X-ray, so essential to modern surgery, and a thousand other developments of the past hundred years which have become necessary to our life and to the growth of our industries.

Shipping, the means of commerce upon which the world now depends for its food, is entirely the result of engineering achievement. A glance at the history of the World War shows that the success of the Allies was, in the last analysis, determined by the success of their shipping. But if we consider war in any of its aspects, we see how impossible it would become without the work of the engineer. Without a commensurate force of able engineers the supplies of the vast armies which are put into the field could not keep up with an attack for a single day. Here, too, we find the work of the chemical engineer in the making of munitions, gas, drugs, and medicine for the relief of the sick and wounded, etc.

II

The profession of engineering should be peculiarly broadening. An engineer is likely to be thrown into contact with every other sort of business and profession, and into the comradeship of every condition of men. He is necessarily in co-operation with the business man—the capitalist, the promoter, the manufacturer, the merchant, the industrial and commercial man; on the other hand, he is always close to the laborer at every turn. The engineer must work with men of other professions: the lawyer who must instruct him as to mining laws, building laws, contracts, the architect with whom he may be in immediate collaboration, the physician who safeguards the health of his men or takes care of the sanitation of the community, the newspaperman who keeps the public informed as to the importance and success of his particular undertakings, the chemist, the statistician, the politician, the economist, even, in cases in which the engineer is more or less in charge of a large community, the school-teacher and the clergyman.

Again, engineering often takes a man into foreign lands, where he must know the laws of the country and to some extent its government, the customs of the people, the language, the international relations with other countries, the history of the country, and especially its geography and physical aspects. If he is given important work abroad he will come to know foreign business men and business methods, economic situations, exchange, export and import trade, natural resources, the railroads and the shipping, and a thousand other details which will give him a large international education,

combining the knowledge of many professions.

One opportunity which in the past has been largely confined to the profession of the law will come in the future, I think, to be more and more the engineer's. That is the opportunity of public life.

The engineer who has been in charge of important work seems to me peculiarly well fitted for statesmanship. He has the knowledge and experience which present-day statesmanship requires. He knows men of all kinds. The problems of labor are familiar to him from first-hand experience. He knows much about business and business conditions. He has followed industrial development closely and knows a good deal of the country's resources. He is probably abreast of shipping, commerce, and foreign-trade conditions. If he has worked abroad he knows something of the temper of foreign peoples, international law and international relationship. He probably knows something about railroads. He has been dealing with things on a large scale; he is at once capable of big conceptions and practical in carrying them out. If he has been successful in engineering he is almost certain to be honest. If he has been in charge of large, difficult undertakings he is probably courageous. He is calm in crises, and is very unlikely to lose his head in confusing situations. Perhaps most necessary of all, he knows human psychology and is a leader of men.

III

Nothing is more false than the more or less prevailing belief that imagination is only useful to the poet, artist, or philosopher, and should be suppressed by the practical man as dangerous. The engineer, practical as he is, must at the same time be as much a dreamer as any of these if his work is of any magnitude. He must have the power to see a thing before it exists. In all his work of inventing and planning he must be able to see a need and its remedy before the need arises; he must forestall difficulties and overcome obstacles before they appear; but especially he must have the power to visualize the completed work in all its details, whether it be a new kind of valve or a suspension bridge. At each stage of the construction he must be able to see in his mind's eye exactly how the work will look at the next stage.

These are dreams—as much so as the dreams of Coleridge or Michelangelo or Kant. But when the dream has been formed in his mind the engineer brings all his technical knowledge and practical experience into play and makes of it a tangible fact.

Newton, watching the fall of the famous apple, used his imagination. Unnumbered millions had observed the same phenomenon, supposing, as some one has said, "that the apple fell because its stem was too weak to hold it." Newton, always curious about causes and effects, thought about it until he was able to see in his mind a force invisible to the eye, which constantly pulled the apple—and all other objects—toward the earth. The story of this discovery and its consequences is a very old one, but it serves to show the psychology of the scientific dreamer.

The man who first conceived of the Panama Canal used his imagination. He probably had his first dream or mental picture while looking at a map. He saw the narrowness of the Isthmus and drew an imaginary line across its narrowest part. Then his imagination worked more in detail, and he dreamed of the surveying, the levelling, the digging; finally of the finished canal, with its locks and navigation of ships, cutting off the long trip round

Cape Horn, of business economy that would result from the junction of the two oceans. Then he came back to the practical, everyday, utilitarian life, but with the memory of the dream persisting, and he brought all his practical sense into the work of its realization.

It is the same process with every great accomplishment in this field. Men will cross a river in boats for hundreds of years, until some dreamer conceives the idea of throwing a bridge across it. To many of those who had crossed in boats the bridge idea had never occurred; practical men, they were accustomed to look only at the existing material things, so they saw nothing but boats. Others had thought vaguely of the bridge, but it had seemed impossible to them; their imagination had not worked on a large enough scale. The man who finally built the bridge not only had an imagination big enough to form a conception of the completed bridge as a real possibility but he was able, by his practical knowledge and capacity, to live up to his dream.

Many of our great inventors have been laughed at because their dreams apparently transcended possibility. So Fulton with his first steamboat and Morse with his telegraph, so Langley in the early days of heavier-than-air machines, were ridiculed by the people and the press of what was considered the absurdity of their conceptions.

What these men and their successors accomplished was due to the very magnitude of their vision, which was able to work beyond the limits of the senses and to invent in the truest sense of the word. In all of these cases the inventor's mind had to picture to itself something which was non-existent. The unimaginative public who could see only with the eyes and not with the mind ridiculed because they were asked to believe in the possibility of something for which there was no precedent.

IV

A quality which must be innate in the engineer is honesty. No amount of brilliant and clever argument will enable him to ignore the simplest laws of physics and mathematics. If he were not inherently honest, he would soon become so or retire as a failure in his profession.

One cannot juggle with the forces of nature. All attempts to cheat nature and get round her laws result in disaster. Facts must be faced; materials of construction must be used for purposes for which they are best fitted; efficiency must characterize the performance of a machine; analysis must prevail instead of guesswork; tradition must be abandoned in favor of absolute knowledge; reason must prevail and law must be obeyed. A clever lawyer may be able by juggling of words to persuade a jury that two and two make five, a physician can convince a perfectly healthy patient that he is ill, a writer can make his public believe the incredible; but the engineer whose figures are juggled, whose materials are imperfect, whose work is cut at the corners, can deceive no one; the bridge falls and he pays the penalty. If he makes a mistake he cannot hope to conceal it by luck or cleverness. Luck is always on nature's side, and she is difficult to outwit.

There are many ways in which an engineer's reputation may be jeopardized by unscrupulousness. A mining engineer may be tempted by large offers of money to give a false opinion in regard to the presence of gold, silver, oil, in certain localities, in order to sell stock in a dishonest chance. Any kind of an engineer may be called on at any time to give expert testimony on the witness-stand. In such a case he might be open to temptation to support one side or the other in return for

some sort of compensation, financial or otherwise. In his relation to the investing public an engineer assumes a responsibility as the indorser of a proposed undertaking. The investor has not the time, and perhaps not the technical knowledge, required for a thorough study of a prospectus. He risks his money upon his belief in the ability and integrity of the engineer, who is, therefore, bound in honor to be especially careful that his indorsement is clear and precise, without mental reservation or opportunity for misunderstanding.

Another temptation to the engineer who is acting in the capacity of purchasing agent or adviser for a company is a commission often offered by the manufacturer or dealer from whom he buys. The acceptance of such a commission, though sometimes condoned by engineers, is really unscrupulous and dangerous.

An engineer who does these things, or is even suspected of doing them, soon becomes an outcast in his profession. There is no profession in which dishonesty is so difficult to conceal or in which it is more disastrous in its effects. No amount of financial compensation can possibly make up to the engineer for a loss in his reputation for integrity. He must, like Caesar's wife, be above suspicion.

Of course there have been cases in which a bona-fide error on the part of an engineer has been mistaken for dishonesty. There are cases in which mining engineers have been deceived by "salted" mines and have given favorable opinions in which at the time they themselves believed. These men have lost their reputations because in cases where the temptation to dishonesty is so great the public is not easily convinced.

Honesty and accuracy of thought go hand in hand. A man who is naturally accurate in his thought is likely to be a lover of truth. This is essentially an inborn quality. Many people lack it entirely, seeming to be born with an incapacity for seeing things as they are, for realizing and understanding facts, and often for thinking and speaking the truth. Seeing the world always through the colored glasses of his own romantic illusions, such a man has no sense of reality and little faculty for true interpretation of cause and effect.

The engineer must be naturally fastidious about figures. He must be dissatisfied with rough approximations. He must be so anxious to arrive at the truth that he is really interested in repeatedly checking himself, proving his data beyond the possibility of an error. He must be capable of handling accurately a large number of small details and of seeing error in the smallest of them. He must be patient in careful work and like it for its own sake.

Judgment, an essential in a good engineer, may be acquired in some degree through experience; the capacity for it must be inborn. The power of making definite, accurate decisions is one which some men can never learn. With all the experience in the world, they become impotent at the moment of decision, and their judgment hesitates. Such hesitation seems to be an inherent psychological defect or weakness in character which is difficult or impossible to overcome. Men who have it seek always a compromise and cannot bring themselves to take any definite step. They are eternally "weighing the evidence on both sides" and postponing the moment of choice until they lose confidence in their own decisions.

V

In thinking ahead the engineer is like the chess-player—always three or four moves ahead of the game. He is able

to do this first through his imagination and then through technical training and practical work. To the man who has the imaginative capacity, the habit of thinking ahead comes quickly enough. It is a habit of supreme importance to the engineer.

Many a brilliant project has been delayed in its execution because the engineer failed to plan beforehand for some detail of an advanced stage of the work. For example, he must arrange for the timely delivery of his material; he must not begin his work until he is sure that all the necessary material is available, and that at no stage of the operations will the work be halted because of the lack of some essential which the contractors have not delivered. In mining work, especially, the time element is sometimes of the greatest importance, and the least delay is likely to be very costly to the owners or ruinous, perhaps, to the investing public.

I remember in the work in the deep-level mines of the Consolidated Gold Fields of South Africa it was necessary to dig expeditiously in order that the investors should make good on their investment. Any delay caused by lack of material or a failure of any kind due to insufficient foresight would have meant a loss to these men who had staked their money on their confidence in the engineers. It was a case in which, once the job was started, it must continue without interruption to its completion, and the engineers who had it in charge were responsible not to a single capitalist or a group of stockholders or to the government, but to a large public of individual investors.

Handling men is based on leadership, one of the elements of the engineer's personality. A born leader has native force of character and a sense of discipline; he is master of himself at all times, has a magnetic influence, and is sympathetic with his fellow men. Besides these fundamental traits, he must have learned something of human nature, human psychology, and the average human limitations. It is difficult to understand perfectly the handling of men unless one has been in their position. It is hard for a man to be a general who has never been a lieutenant. Men who begin life by commanding men but who have had no experience as subordinates are likely to be severely handicapped in this respect, though they are born with many of the qualities which characterize leaders. For this reason I advocate a period of hard manual labor for engineers to give them an opportunity to see and learn the conditions of labor, the attitude of the laborers toward each other and toward their employer, their limitations, and the common mistakes which are made by the men who handle them. A man can easily learn these things from the bottom; he can never perfectly learn them from the top. Besides a knowledge of men, such training gives practical experience which can be got in no other way and which is of the greatest value later.

The engineer will select men with the same care and investigation that he selects materials. He will demand efficiency and good management, because those things are essential to successful business, and government is the greatest business of all.

FUNCTIONS OF ORGANIZED COMMITTEES

BY THEODORE WILLIAMS*

SINCE the beginning of the war much has been written of the advantage of charting organizations, processes, routine, schedules, etc., and it is needless to point out the fund of valuable information that can be obtained at a glance from such charts in comparison with the study that has to be given to written explanations.

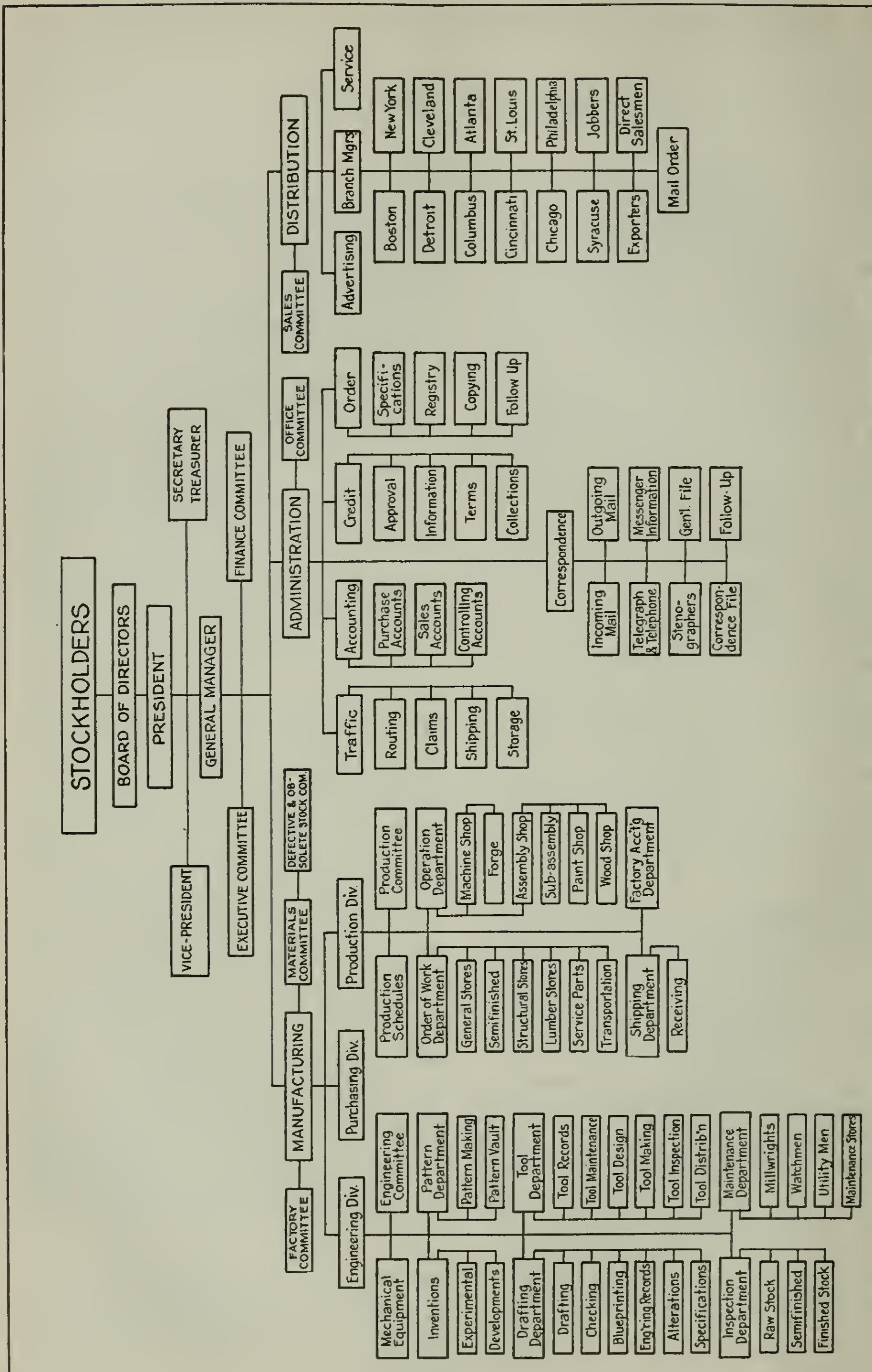
It has been the custom of many manufacturers in the past to build an organization around individuals instead of around functions. It has been proved, however, that a great advantage is gained in recording the administrative determinations on a chart of authority, as it shows that much can be accomplished in eliminating those functions which are being duplicated, those incorrectly assigned, those that are important but are inadequately provided for, those which are given more prominence and attention than they deserve, and those which are obsolete and should be discontinued.

Many companies make the mistake in building an organization of placing the personnel in charge of established functions, and others make the mistake of building an organization around individuals, adding new functions as fast as they can take them. A company today, to obtain the maximum degree of efficiency in formulating its line organization, should compromise between the ability of the individual under consideration and the functions to be grouped, i.e., assimilate those functions that are closely allied to each other, which will form units, and co-ordinate these with others so that a consistent range of functions can be assigned to the individual placed in charge. This permits the training of understudies for the particular post and protects the organization. In the past too many organizations have depended upon the ability of the individual. While this, of course, cannot be overlooked, nevertheless a well-rounded concern will have its organization, personnel, and routine so established that the loss of one individual will not interfere materially with its proper functioning.

Much has been said in general about the charting of organizations, but little has been mentioned about the charting of committees, illustrating how they can plug up the weak places and the small drains that a business may be subject to and systematically utilize this information so that mistakes can be rectified and the organization made more successful in increasing efficiency of its units.

The many details left to chance, guess, and memory in finance, buildings, and equipment, management, accounting and costs, production, working force, materials and supplies, goods themselves, shipping, buying and receiving, marketing and sales, and dealing with customers, can be picked up and utilized by organized committees and made so valuable that the expense incurred from operating these committees will be slight compared to the savings they effect. Not only do such committees pick up the loose ends, but they are also on the alert to see that decisions are made and expedited.

* General Manager of Economy Baler Company, Ann Arbor, Mich.



Line Organization Chart, Economy Baler Company, Ann Arbor, Michigan

There are many other advantages to be gained by the committee system. Among other things:

It keeps the executives of the line organization on their toes in fulfilling the duties of their respective positions because all troubles or interferences in progress come to the attention of some committee, and this eliminates the great game of "passing the buck."

It creates clearer understanding between members and builds up the esprit de corps.

It saves time for the executives higher up, as only the important items that the committees have not authority to solve are brought to their attention.

It gives the executive committee, which is the supreme power, complete control of all important matters that these subordinate committees solve, as the minutes and reports of these subcommittee meetings are read before the executive committee at its weekly meetings.

This method of organized committees presents to the management an opportunity to unearth first-class men from its rank and file, since the ability of each member is displayed in the minutes of each meeting. It is human nature to procrastinate, but with a combination of organized committees and clearly defined executive duties, one is in competition with the other to prevent putting off necessary acts or falling into error.

As a concrete illustration of the workings of this system the writer presents the case of the Economy Baler Company, with which he is most familiar. The line organization of this company is divided into three distinct divisions, known as—Administration, Manufacturing, and Distribution, and these divisions have their respective committees (See Line Organization Chart). Many important problems come up in the departments of these divisions which no one individual would care to take the responsibility of solving, and they are therefore placed before a committee. Those problems that cannot be decided upon by the division committee are brought by the chairman to the executive committee, which has the power to act. The chart and details following are those of committees adopted to meet the particular needs of the company. From these an idea may be obtained of the extent to which one may proceed in developing such a system. The committees meet weekly at specified hours.

The first and most important committee is the executive committee, whose members consist of:

The general manager, who acts as chairman and is in charge of administrative details.

The office manager, who acts as secretary and takes care of records and data.

The sales manager, who looks after distribution.

The treasurer, who has charge of the finances.

The factory manager, who looks after manufacturing.

Any other persons qualified to serve.

The duties of this committee consist of:

1. Planning the organization, the policies, the product and measures to meet emergencies.
2. Ordering the execution of certain acts in the way of purchasing, production, selling, accounting, and finance.
3. Creating leadership, developing the men, and setting the pace.
4. Superinspecting and maintaining policies, methods, and results.
5. Choosing and developing understudies for the various positions.
6. Being responsible for the quantity of machines to be produced.
7. Maintaining and keeping abreast of activities under its jurisdiction.
8. Clearly defining the various classes of executive duties and grouping them in such a way that there will be arranged for

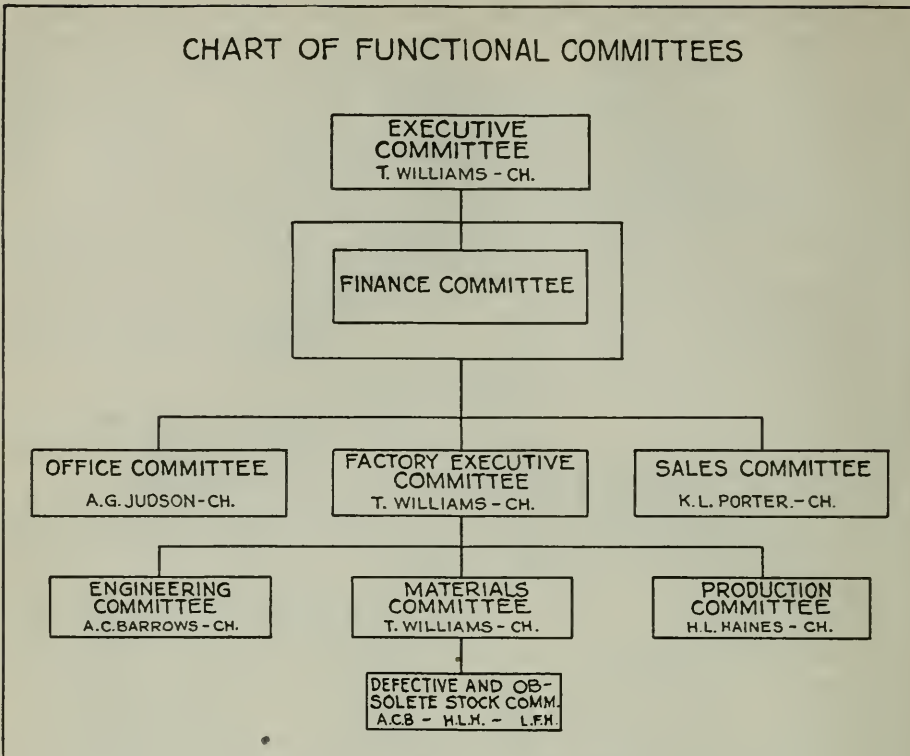


Chart of Functional Committees

each person a consistent range of functions so that all the persons in each group will be bound together in a well-balanced administrative hierarchy.

Directly under the executive committee is the finance committee, whose membership is as follows:

The treasurer, who is the chairman and looks after financial matters.

The auditor, who acts as secretary and has charge of the accounting.

The general manager, who has charge of the financial administrative work.

The sales manager, who looks after distribution.

The office manager, in charge of the office.

The factory manager, who handles manufacturing.

Any other members qualified to serve.

This committee is formed for the assistance of the treasurer who calls meetings and secures the opinions and advice of the members to aid him in forming satisfactory plans in all important financial matters such as:

1. Large expenditures.
2. Extra payments to agents.
3. Commissions to agents.
4. Stopping payments to agents pending satisfactory adjustment of their accounts.
5. Calling periodically for financial statements from the auditor.
6. Checking the annual statement of the company.
7. Checking up on all audits.

Matters of general administration are in the hands of an office committee, consisting of:

The office manager, who acts as chairman and has charge of employment, data, records, etc.

The correspondence department head,

who is the secretary, and handles the correspondence, etc.

The auditor, in charge of accounting.

The traffic manager, who looks after routing, shipping, claims, etc.

The order department head, who has charge of specifications, registry, copying, etc.

Any other members qualified to serve.

The duties of this committee take in the following matters:

1. Devising records, methods, and systems for carrying out the function of control and for co-ordinating the activities of one department with those of another.
2. Studying the relations between office employees and the management.
3. Devising methods for increasing co-operation and incentives.
4. Enforcing the rules adopted.
5. Investigating serious complaints from the employees.
6. Attending to welfare and compensation.
7. Developing efficient conditions of work.
8. Issuing standard instructions that affect all office operations.

Manufacturing matters are attended to by a number of subcommittees, of which the first is the factory committee.

The members of the factory committee consist of:

The factory manager, who is the chairman and looks after the general subject of manufacturing.

The planning supervisor, who acts as secretary and is in charge of schedule and methods.

The superintendent of engineering, who attends to all engineering matters such as mechanical equipment, inventions, experiments, etc.

The superintendent of production, who handles production schedules, order of work, general stores, etc.

The purchasing agent, in charge of purchasing.

Any other members qualified to serve.

The factory committee is supposed to:

1. Obtain the maximum production of the plant at the minimum cost.
2. Watch the sticking point in production and overcome it.
3. Hold down the volume of finished parts by keeping them moving.
4. Pass upon new models submitted by the engineering division.
5. Direct the engineering division to build tools when it is desired to reproduce new models.
6. Encourage men to discuss problems and troubles.
7. Settle disputes and complaints.
8. Study the parts, uniformity, quality, adaptability, equivalency, and margin to carry, of materials.
9. Pass upon all reports submitted by the engineering, production, materials, and obsolete and defective stock committees.
10. Set wages and hours of labor.
11. Enforce rules adopted.
12. Foster good relations between management and men.

The second subcommittee handling manufacturing matters is the materials committee, made up of:

The factory manager, who is the chairman and attends to manufacturing.

The purchasing agent, who acts as secretary and looks after purchasing.

The production superintendent, in charge of production.

The chief engineer, who looks after the design of product and the specifications.

The planning supervisor, who handles schedules and methods.

The general storeskeeper, in charge of stores.

Any other members qualified to serve.

The materials committee is responsible for:

1. The amount of material to carry.
2. The quality, quantity, and specifications of materials received.
3. Reports showing materials on hand, received against schedule, and what is due or behind.

4. Approval or disapproval of supply of materials.

5. Arranging methods to prevent material being lost or stolen.

6. Materials not up to specifications and the disposition of same.

7. Proper records, data, and systems of stockkeeping.

8. Classification of stock and location of stockrooms.

9. The taking and figuring of inventories.

10. The issuance of orders to requisition and purchase materials to replace defective stores or stock not made by the company.

11. Issuance of standard instructions pertaining to materials.

Directly under the authority of the materials committee is the obsolete and defective stock committee, consisting of:

The production superintendent, who acts as chairman and looks after production.

The chief inspector, who is the secretary and is in charge of inspection.

The chief engineer, who handles design of product.

The purchasing agent, handling salvage.

Any other members qualified to serve.

This committee is required to hand in each week to the materials committee a report of the defective and obsolete stock accumulated during the preceding week together with the reasons for such accumulation and the decision made by the committee as to the disposition of this stock. In addition, this committee makes recommendations for the ordering of parts to replace spoiled or defective work.

The third main subcommittee for general manufacturing matters is the engineering committee, whose members are:

The chief engineer, who is the chairman and handles general engineering matters.

The tool division supervisor, who acts as secretary and looks after the tools.

The sales manager, in charge of customers.

The production superintendent, handling production matters.

The chief designer, looking after the product.

The chief inspector, who sees to inspection.

Any other members qualified to serve.

This committee is supposed to:

1. Co-operate between the engineering and production departments.

2. Decide on the methods used in inspection.

3. Select gauges and precision instruments.

4. Watch the clearness and accuracy of all drawings and sketches.

5. Establish limits and tolerance.

6. Pattern work in relation to designing.

7. Study such designs as make necessary the cutting of excess metal.

8. Design without reference to jigging, when jigging is necessary.

9. Design with reference to showing the most efficient machines and tools in the shop.

10. Approve or disapprove the tools to be built.

11. Lay out manufacturing operations.

12. Issue standard instructions concerning the engineering division.

Another subcommittee for manufacturing is the production committee, which is made up of:

The production superintendent, who acts as chairman and has charge of production.

The planning supervisor, who is the secretary and looks after schedules and methods.

The machine foreman, in charge of the machine shop.

The assembly foreman, in charge of assembly.

The general storeskeeper, handling stores.

Any other members qualified to serve.

The duties of the production committee embrace the following:

1. General supervision of production departments.

ECONOMY BALER CO.
INSTRUCTIONS

DATE 1/14/21 NO. 99

SUBJECT Pass System 1 SHEETS

SHEET 1

COPIES TO

TW
ACB
CAS
JHMCL
LH
HW
HLH
LGS
ACV
RIB
IHC
EW
WH
PWH
HJN
KLP
AGJ
CDA
BLB
CBA

1. Visitors Factory Pass.

(a) Visitors or outside representatives will be admitted to the factory only when accompanied by an official or a foreman or an individual delegated to do so by an authorized list approved by the General Manager, or on presenting a pass issued from the Main Office, and signed by the General Manager, Office Manager or appointed representative.

2. Employees Pass to Plant.

(b) No employee will be admitted to the Plant before or after regular working hours, or on Sunday or holidays, unless he is provided with a pass to the Plant, signed by any one of an approved list of executives. This Employees' pass will cover only such time outside regular working hours as is specified on pass, and be valid only on date or dates thereon.

3. Permanent Passes.

Permanent passes will be issued by the General Manager to all who, in his opinion, should have access to the Plant at any time day or night.

4. It is the duty of the Foreman of each Department to challenge any person who stands or loiters in a department, and if he is not provided with a pass, or accompanied by an executive or foreman or person delegated on approved list, to conduct him to the Main Office. At the Main Office, the proper authorities shall question him if necessary, and either issue a pass or reject his admittance. The list of men authorized to issue Passes will be added to or changed from time to time by direction of the Management.

By Direction of Factory Committee.

P.W.HUSTED,
Secretary.

Approved by:
T. WILLIAMS,
Gen. Mgr.

FIGURE 1. INSTRUCTIONS SENT TO COMMITTEE MEMBERS

2. Division of work into departments.
3. Securing maximum output of factory.
4. Recommendation of changes in materials.
5. Recommendation of improved designs or processes of manufacture.
6. Keeping thoroughly posted upon all matters and methods pertaining to the manufacture of the product.
7. Developing the earning powers of employees in production.
8. Visiting outside plants to secure ideas on factory organization, equipment, and production.

9. Responsibility for success or failure of production.
10. Decisions on what to make, the quantities, and the time allowed.
11. Scheduling the orders received.
12. Expediting factory orders.
13. Control and movement of materials.
14. Knowledge of factory capacity.
15. Issuance to shop of information regarding plans made for production.
16. Arranging schedules to meet emergencies.
17. Progress of production.
18. Elimination of conditions which interfere with prompt execution of plans.
19. Advising factory committee as to items needing attention.
20. Issuance of standard instructions affecting production.

The matter of distribution is divided up among several subcommittees, as will be seen by reference to chart (See page 296) only one of which we treat of here in detail—the sales committee. The members of this committee comprise:

The sales manager, who acts as chairman and is in charge of the sales.

The sales statistician, who is the secretary and looks after statistics, promotion, etc.

The general manager, handling administrative matters.

The office manager, in charge of accounting, data, records, etc.

The factory manager, who looks after manufacturing matters.

Any other members qualified to serve.

The sales committee is supposed to:

1. Determine the methods of distribution.
2. Set the selling price of products.
3. Determine the selling policies.
4. Select the course of training for salesmen.
5. Decide on the methods necessary to anticipate unexpected competition.
6. See that the selling organization sets the pace to sell more than the company produces.
7. Make recommendations on new lines that will be of aid to the company.
8. See that the efficiency of the sales force is maintained.
9. Develop new fields.

The secretary of each of the above-named committees is held responsible for the keeping of written minutes of each committee meeting and for the distribution of copies to all committee members. He is also required to issue memorandums on decisions and other information to the units or individuals concerned and to send out all standard instructions decided upon by his respective committee.

To illustrate the method of operation of the committee system described, the writer appends, together with the minutes of one of the factory committee meetings, the memorandums and the standard instructions that were issued as a result of this meeting. (See Figs. 1 and 2).

ECONOMY BALER COMPANY

SUBJECT: FACTORY COMMITTEE MEETING
No. 31 1/10/21

1. Meeting called to order at 2 P.M. by chairman, Mr. Williams—all members being present.
2. Minutes of Meeting #30 read and approved.
3. Engineering weekly report read and approved. Engineering Committee Meeting report read and approved.
4. Report of Production Department read and approved, as were the Production Committee Meeting minutes.
5. Report of Purchasing Agent read and approved as read.
6. Tool Division report by Mr. Swart approved as read.
7. The Factory Committee approves the recommendation from Engineering Committee that all threads on shafts, bolts, set screws, etc., be furnished in U. S. Standard, and directs the Engineering Committee to take care of this matter in the most feasible manner. (See Fig. 2, Memo #1.)

8. The Factory Committee approves the recommendation from the Engineering Committee that a switch for the Mon-O-Rail System in the General Stores Department be purchased, and directs the Engineering Department to instal same at their convenience. (See Fig. 2, Memo #3.)

9. The Factory Committee listened to the report contained in paragraph #7 of the Engineering Committee Meeting regarding cost of tooling for Pitmans, Side Boxes, and Plunger. Before taking any definite action in this matter, the Chairman of this Committee advised that he desired a comparative estimate as to the cost of machining above members by present methods and by methods used after tooling for same. Mr. Swart was requested to furnish this estimate at next meeting. However, Mr. Williams said that he did not wish to table the Engineering Committee recommendations, but said that he had other ideas in mind which might take care of this matter, and that this Committee only desired more information on this recommendation. (See Fig. 2, Memo #2.)

10. This Committee was of the opinion that the Engineering Committee could,

MEMO. EBCO.
TO Engineering Committee DATE 1/10/21
FROM Factory Committee SUBJECT USS THREADS
COPIES TO:

The Factory Committee approves the recommendation of the Engineering Committee that threads on shafts, bolts, set screws, etc., be furnished with US Standard, and directs the Engineering Committee to take care of this matter in the most feasible manner.

MEMO. EBCO.
TO Mr. C. A. Swart, DATE 1/10/21
FROM Factory Committee SUBJECT COSTS
COPIES TO:

The Factory Committee requests comparative estimates as to the cost of machining Pitmans, Side Boxes and Plungers, by present methods and by methods used after tooling for same.

Kindly submit same if possible at the next regular meeting of this Committee.

MEMO. EBCO.
TO Engineering Committee DATE 1/10/21
FROM Factory Committee SUBJECT MON-O-RAIL SYSTEM
COPIES TO:

The Factory Committee approves the recommendation of the Engineering Committee that the switch for the Mon-O-Rail in the General Stores Department, be purchased, and directs the Engineering Department to instal same at their convenience.

By Direction of the Factory Committee.

P. W. HUSTED,
Secretary

VERBAL ORDERS DON'T GO
TREAT ONE SUBJECT ON THIS SHEET

Figure 2. Sample of Memorandum Sent to Committee Members

themselves, best handle the setting of the date on which the new time cards should go into effect, and advised that Mr. Barrows and Mr. Haines get together and make this decision, as their departments are most closely related to the new system. This Committee advised that the heads of the Engineering and Production Departments see to it that their foremen and workmen are first thoroughly familiarized with the system regarding production orders and the new time system, before they issued orders to instal the system on an actual working basis. Mr. Williams advised that they get their men together and talk to them directly, or have the foremen of the various departments go over the situation thoroughly with the men personally or in assembly, at some noon hour meeting or other advantageous time.

11. This Committee recommends that the Engineering Committee in issuing new Bills of Material pare down the number of copies issued, as there was no need for these bills in a number of departments where they had heretofore been kept. Mr. Barrows reported that this would be attended to at once, as he had figured the cost of issuing a single bill of material at $25, showing that this would save considerable time and expense which was needless.

12. Considerable discussion ensued regarding issuance of passes to Plant and posting of warning signs about the Plant. The Committee recommends that the Engineering Division Superintendent take up the matter of making suitable signs for this purpose with the Maintenance Department, and direct this Department to post these signs all about the Plant and grounds in the most conspicuous places. Mr. Williams said that he would get up standard forms of passes to be issued to strangers who may wish to visit the Plant or go into the Plant on business, and that any person or persons found in the Plant unaccompanied by an Executive or Foreman of a department would be asked to show a pass or questioned as to his authority for being in the Plant. These passes shall be issued from the office and have the O K of the management. The Secretary presented tentative copy of standard instructions for pass system, which was approved by the Committee and directed to be issued. (See standard instructions #99) which are sent to committee members.

13. Mr. Williams again took the Committee into his confidence regarding results that he has already attained from the sales field, and the Committee was very much encouraged over the outlook as presented, showing that the management had certainly brought new life to this branch of the organization. He went into further detail than at previous meeting, showing what was actually being started in this branch and some of the most striking features that were outlined as methods for procuring sales. Mr. Williams also pointed out to the members some of the opinions and facts which he obtained at the Babson meeting in Detroit last Thursday, which he and Mr. Porter attended. The facts and figures as presented were received with considerable interest.

14. Meeting was adjourned at 4:00 P.M.

P. W. Husted,
Secy. Factory Committee.

STATISTICS AND THE SCIENTIFIC METHOD

BY HORACE SECRIST*

WHAT are statistics? Statistics are quantitative tools by which judgments are formed; by which, on the basis of certain hypotheses, theories are tested, quantities measured, and finally decisions, quantitative in character, are made. Differences are significant. It is these which are expressed in quantities, percentages, or ratios. These are statistics. They are no better than their makers, their users, or their compilers. There is the same distinction between the identity of a statistical fact and the conclusion which may be drawn from it as there is between the density of a material and the conclusion respecting its industrial use.

Statistical tools are quantitative. The distinction made by Thorndike in his "Mental and Social Measurements," that "the difference between two and three is not the difference between six and seven" makes this clear. Quantitatively, it is one, but as one may have much or little significance, depending upon the use to which it is put, or the unit of measurement to which it applies.

If there is anything fundamental in statistics, it is the unit back of the quantitative expression. The significant thing is not so much the measure, in Arabic symbols, of a more or less, as it is the unit to which the quantity is applied, be it a ton-mile, a sale, an occupation, a wage, a death, an industrial accident, or even a "successful engineer."

Things which are equal to the same thing in name are often not so in use, and things which are the same in use and meaning are often called by entirely different names. The most significant thing in statistics, as a tool in the development of the logical processes of thought, is the use of standardized units. If statistics are tools, and units are the blocks with which the statistician builds, then the whole statistical process is largely one of logical induction.

The good statistician is the person who insists that the units of measure with which he works shall be accurately defined and clearly applied to the problems which he is studying; who draws logical conclusions from the data at hand and is fearless enough to insist that the action toward which his conclusion points, is actually taken. It makes no difference whether it has to do with realty valuations, valuation of public utilities, the measurement of the cost of living, or industrial efficiency; the method is the same. It is the process of logical induction from sample data—a method not peculiar to the statistician, but universal.

The claim has been made that the social sciences are not sciences, because they cannot predict, and that they are not exact in the same sense as are the physical sciences. From that standpoint they have their limitations, but as classified bodies of knowledge, they are sciences in a very real sense.

Karl Pearson, the English biometrician, in his "Grammar of Science," states, "that the unity of all science consists alone in its method, not in its material." He says further that the real justification of the scientific method in business, in industry, in studies of

*Professor of Statistics, Northwestern University, Chicago, Ill.; Statistician, Tonnage Section, Division of Planning and Statistics, United States Shipping Board.

life and death and birth, etc., is that it makes a person a better citizen. "Citizenship," he continues, "is good or bad in proportion to the degree to which there is discrimination between things which seem to be and things which are. The classification of facts, the recognition of their sequence and relative significance is the function of science." The real scientist is the person who sees differences, who discriminates not only as to the data which he considers as evidence, but as to the conclusions which he draws from them. If this is the proper approach to the study of life, then it is of interest not only to the engineer of mechanical, civil, or industrial bent, but also to everyone who really attempts to be scientific.

II

The first condition of scientific method is intelligent observation. In recommending a sales campaign or a sales analysis, it is impossible even to start without intelligently observing the differences between goods, between people, and between strata of society. To make allowance for all differences is, of course, unthinkable—they are infinite. People are not identical in their reaction to advertising, to bargain sales, and to the clever tricks of salesmen. They have different incomes, peculiar racial and customary traits and prejudices. They fall into strata of different depths and contours. A market is not a homogeneous thing geographically. In one place it is deep and fertile; in another, shallow and sterile. To advocate an advertising or a sales campaign without first considering such fundamental differences as the reaction of people to different kinds of goods is grossly unscientific. To do so is to ignore significant differences and to violate a fundamental principle of scientific method.

But to observe intelligently will not suffice. Scientific measurement is indispensable. The industrial engineer is seeking for units with which to measure fatigue, industrial morale and fitness, the effect on production of a shortened work day, etc. The significance of the problems which these subjects suggest can hardly be bounded by any narrow ring fence. It borders on a variety of fields and raises fundamental questions. The conditions under which production is carried on, such as the uniformity of the power and the technical features of the machine have an engineering significance. The training and fitness of the operator are of interest to the economists, while the chemical composition and uniformity of the material with which he works, raise problems with which only the chemist is competent to deal.

In all fields, scientific inquiry rests fundamentally on the adequacy of units of measurement. Problems may involve the collection of units for determining accident frequency or severity rates in industry, or of fixing the responsibility for accidents as between the machine, the carelessness or low morale of the operator. No matter what the field of study, every logical process is interwoven with the need for a unit of measurement.

It has been said that the first condition of being scientific is to observe intelligently. Following this, but of no less importance, is scientific measurement. The next step—impartial analysis—hinges on both. The engineer in his technical research, or the statistician in the analysis of the market, or in the determination of reasonable rates, wages, or earnings in public or private enterprises, must proceed on the basis of impartial analysis. Most of us, as a matter of fact, think in general terms; we are prejudiced; we have our minds made up. Our opinions rest on faulty

evidence. We hesitate to examine impartially every issue which is raised. It is so much easier to assent, or to dissent, and to take refuge behind our ignorance or our wilfulness, by exclaiming: "This is my opinion." To do this is to reject a fundamental of scientific method. The real engineer like the real statistician is the one who respects the truth, and who, impatient though he may be until it is discovered, knows no other method than that of impartial analysis.

Having defined the part which observation plays in scientific method and in its application to industry and to professional life, it is necessary to insist upon another condition by which the seeker after truth must be guided. It is that of logical inference. In spite of the presence of satisfactory facts, unwarranted conclusions may be drawn because of false premises and illogical deductions.

III

There is one more step which must be taken in the process of scientific analysis. Application or use must be made of the conclusion reached. It is not enough to infer logically on the basis of given facts; action must be taken. Most statistics, if they are not dead when collected, soon die. It is unfortunate that most of them are for file and not for use. This happens because they have been collected without a definite purpose in mind and do not, therefore, point to tangible results. Application is unwarranted. But are statistics to be condemned or inquiry halted because of the fruitlessness of unguided or misguided efforts? The fault, if fault there be, is not with the statistics, but with the statistician.

The goal of statistical study is comparison. But for this purpose, the facts which are used, that is, the tools, must be representative. Rarely is a study made in which all the facts or data are available. Samples must be collected. But upon what basis are they to be chosen? Other things being equal, the more complete the sampling, the better the data. If they are truly samples, those selected must partake of every characteristic found in the complete data. Moreover, every characteristic must have a chance of being included in the proportion in which it exists when all items are considered. In how many cases where samplings are made in the engineering and business field, is it possible to duplicate the homogeneity which characterizes the samples used by the chemist?

How many samples are necessary in order to study industrial fatigue? How many are needed to study any of our basic trade customs, or even to measure such a seemingly tangible and fundamental thing as price change? The answer is found in the preciseness and the representativeness of the data selected. At all events, the data must fit, they must be germane to the particular problem.

Moreover, statistical facts must be stable, their identity must be preserved, if they are to be used for comparative purposes. That this is true may be illustrated by reference to the difficulty of comparing prices of different commodities over a series of years. The prices of production goods react differently than do the prices of so-called consumption goods under conditions of shifting demand. The prices of mineral products, other things being equal, are more stable than the prices of animal products. If prices which are supposed to represent a market are selected over a series of years without reference to the peculiarities of manufactured commodities as distinct from raw products, from mineral products as distinct from animal products, the conditions which are represented are

unstable, both as to the character of the goods and the period which is covered. To dip down in the sea of prices in order to select a sample is far different from selecting a small quantity of a homogeneous liquid for analysis. To do one is not to do the other.

IV

Statistical data, to be of value, must be comparable. Prices of today are not fully comparable to those of the war period, because methods of purchase and sales, of credit extension, and governmental control at the two periods are different. The greenback prices of the Civil War period are not comparable with those following 1879. Prices in England now are not fully comparable with those before the war. Nor are prices there to be interpreted in the same manner as prices here.

Comparisons are necessarily made on the basis of data which are imperfect in some respects. Absolute identity is probably never realized. Nature exhibits herself in variety, and so does business. Men and institutions vary from place to place, from time to time, and from environment to environment. Even in the so-called exact sciences, the exactness is relative and never absolute. But in all fields of study it is possible to have, and necessary to insist on having, essential homogeneity. Accuracy and comparability must characterize the data which are used. Of course, these standards are daily being sacrificed and ignored by the expert, as well as by the layman, with the consequence that statistics are in disrepute, the work of the statistician discounted, and business conducted, for the most part, on hit or miss methods.

Of course, there are different kinds of statisticians. If one desires to prove a thing, or to support by statistical evidence a preconceived conclusion, there are plenty of data which will serve the purpose. The idea that statistics are dangerous because one can prove anything by them, is sound. One can, if the material is selected with that end in view.

The bearing of what has been said demonstrates a common bond between the use of quantitative data for statistical purposes, and the use of the same kind of data for engineering or other purposes. Both uses involve an application of the scientific method in the discovery of truth. Both involve the uses of units of measurement. The engineer thinks in terms of the foot, the mile, the meter, the rod, the kilowatt-hour, the ton-mile, and other complex units. The statistician thinks in terms of the dollar, price demand curves and price supply curves, markets, etc. These are the units which are utilized for purposes of analysis. The method which is pursued in the engineering, the educational, and the business field is identical in that it involves, on the part of the investigator, intellectual honesty and unconditional demand for the truth. It requires intelligent observation, scientific measurement, impartial analysis, logical inference, and an application of the inference to the problem to which it relates. To stop short of the application is to sacrifice art to science, when it is possible and desirable to realize both.

A great body of data is available for study. How must an analysis of it proceed? The data may relate to rainfall, weather conditions, evaporation, movements of the crusts of the earth, drainage, wages, cost of living, markets, employer-employee relations, etc. They have been carefully selected, are definite; they are applicable to the problem which is being studied. They have been properly classified and

grouped, and are ready for interpretation. To what standards must it conform?

Comparison must be made between data having parts in common. This may sound trite, but if you will think of what the injunction implies, you will easily recall many instances where comparisons are made in complete violation of it, and on the basis of which money is expended, and business policies and plans altered.

Data may be incomparable because of differences attributable to place. Wages in England may hardly be compared with those in Chicago. Why? Because, after full allowance is made for the conditions which are different, points in common are few.

Moreover, time differences may destroy the basis for comparisons. Take for instance, a comparison of stock and bond prices over a series of years. Have the stocks and bonds retained their identity? What effect on the original issues has been produced by the floating of new securities? What has been the effect of increased capitalization? Have the property rights for which they stand remained the same in spite of the changes? Securities may still be called by the same name, but in fact be different.

Grave statistical errors result from comparing things which are different, or conditions which cannot produce the factors which are compared. This statistical sin is common in the field of social statistics where comparisons relate primarily to the individual and where due allowances are not made for his peculiar and often transient reactions. It may even be common in the exact sciences.

In all scientific study certain things should be avoided. This fact is mentioned not because it is new, but because it is fundamental. A single cause should not be confused with a combination of causes. This is not so much a statistical, as it is a logical injunction, but it must be observed, nevertheless. He who expects, in industry, a single cause always to give rise to a single effect, or a single effect always to come from a single cause, is expecting more than will ever be realized. To look for a single cause from a single result, or a single result to arise from a single cause, is useless. Causes and effects do not operate in this fashion, and the person who forgets this fact in the interpretation of statistical data is bound sooner or later to be disappointed with the results. There is, for instance, no single cause for labor distrust, sabotage, or unrest, and there is no single result which is brought about by them.

Immediate and superficial causes should not be confused with those which are remote and fundamental. What are the "causes" of the high costs in present methods of retail distribution? Some ascribe these high costs to the recent war, some to profiteering. Both may be immediate, but they are hardly fundamental. More fundamental causes are the presence of the small and poorly equipped merchants and their grossly unbusinesslike methods.

Distinguish between drawing a particular deduction and giving it general application. This is an error into which many investigators fall, and from which immunity comes at a high price.

These are some of the "don'ts" in statistical analysis which are worth mentioning. They may be stated again in summary. Avoid confusing a single cause with a combination of causes; avoid identifying immediate and superficial with remote and fundamental causes; distinguish between drawing a particular deduction and assigning to it a general application.

RESOURCES AND THEIR APPLICATION

BY LESLIE E. PALMER*

WHERE are our profits? What shall be our policy with respect to the disposition of our future profits? These are questions which are typical of directors and officers who aspire to effective administration. The first question having regard to that which has occurred, may be answered in a great degree of definiteness. The answer to the second question is subject to all the uncertainties of the future. Certainly, however, it is important that the results of past operations be thoroughly analyzed and understood before any attempt is made to lay down future policies. An intelligent presentation of the facts of the past and present is a vital necessity for the formulation of plans for the future.

Too often, an executive deems it sufficient to have presented to him simply a trial balance of his accounts, or, at best, a balance sheet and related trading and profit and loss statement. From these statements, by laborious and confusing figuring, he attempts to trace the trend of his business.

An excess of assets over liabilities represents proprietorship. In the absence of capital, contributions, or withdrawals, any change in proprietorship must result from earnings or losses. It is obvious, therefore, that the amount of such earnings or losses will be reflected in a comparative balance sheet by net increases or decreases in assets or liabilities. It may here be noted that by the usual single-entry method of account-keeping, the amount of profits or losses during a period is determined by comparing the assets and liabilities at the end of a period with those at the beginning of the period. Only by modern double-entry methods, is it possible, easily and accurately, to classify, concurrently with the transactions, the sources of income and the nature of outgo.

Assuming, however, that under ordinary procedure, accurate balance sheets have been prepared as of the beginning and end of a period, showing increases and decreases in the various component items thereof, assuming also that by a related statement of income and profit and loss, all revenues and expenses are classified and detailed, it is still a fact that, in general, it is possible to "tie up" but one figure on the balance sheet with but one figure on the income statement. These figures represent, respectively, the increase or decrease in proprietorship shown by the former, and the net profit or loss, shown by the latter. Every executive should understand that, in accordance with the formula that assets less liabilities equal proprietorship, the net profit or loss shown by an income and profit and loss statement is identifiable in the various asset and liability accounts.

It is essential that a careful executive lay down a definite policy with respect to the investments of his company and assiduously follow this policy, whether derived from capital or income sources. A proper equilibrium should be maintained in the relation between those assets and liabilities which are fixed and those which are liquid or current. In an endeavor to provide for too rapid expansion, or to take advantage of apparently favorable buying opportunities, investments in property and plant

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may necessitate the borrowing of money up to the very limit of credit. The company may thereby become burdened with abnormal interest charges, or be unable to finance the necessary purchasing for increased or even continuing production.

In order to decide whether a proper equilibrium exists in the case of any particular company, it becomes necessary, of course, to consider other factors than the mathematical ratio of one class of resources to another. There must be full understanding of the nature of the business and its purchasing and selling policies, as well as of general business and financial conditions, as they affect that business. It may be stated generally, however, that investments in plant or equipment, which are a permanent requisite to the carrying on of business, should represent either proprietary interest or should be offset by long-term indebtedness, and cannot be depended upon to furnish funds for current financing. Current assets, such as accounts receivable, notes receivable, and inventories, should be measured by the reasonable expectancy of their turnover and conversion into cash.

It is obviously impracticable to consider separately each transaction of a business, "ear-marking" the dollars involved, and noting the change in invested capital. It is possible, however, to develop from accounts kept in a reasonable degree of detail, certain exhibits which bring clearly to attention the flow of resources, classified into the categories of increases or decreases in assets, liabilities, and proprietorship. Let us consider the simple case of a corporation from the books of which the following trial balances are taken, as at the close of the years 1916 and 1915 respectively:

	December 31	
	1916	1915
DEBITS		
Land and Buildings	$40,000.00	$35,000.00
Machinery and Equipment	11,000.00	9,000.00
Raw Materials	6,000.00	4,000.00
Work in Process	1,500.00	1,000.00
Finished Stock	7,000.00	6,000.00
Cash	1,000.00	3,000.00
Accounts Receivable	18,000.00	10,000.00
Total	$84,500.00	$68,000.00
CREDITS		
Capital Stock	$50,000.00	$50,000.00
Accounts Payable	22,000.00	14,000.00
Surplus	12,500.00	4,000.00
Total	$84,500.00	$68,000.00

Is it sufficient simply to have these figures presented, although, of course, they give information? Restating the items in the form of a comparative general balance sheet, we have the following:

General Balance Sheet
December 31, 1916 and 1915, and Comparison

	December 31		Increase *Decrease
	1916	1915	
ASSETS			
Property:			
Land and Buildings	$40,000.00	$35,000.00	$5,000.00
Machinery and Equipment	11,000.00	9,000.00	2,000.00
Total Property	$51,000.00	$44,000.00	$7,000.00
Current Assets:			
Cash	$1,000.00	$3,000.00	**$2,000.00*
Accounts Receivable	$18,000.00	$10,000.00	$8,000.00
Inventories:			
Finished Stock	$7,000.00	$6,000.00	$1,000.00
Work in Process	1,500.00	1,000.00	500.00
Raw Materials	6,000.00	4,000.00	2,000.00
Total Inventories	$14,500.00	$11,000.00	$3,500.00
Total Current Assets	$33,500.00	$24,000.00	$9,500.00
Total	$84,500.00	$68,000.00	$16,500.00
LIABILITIES			
Capital Stock	$50,000.00	$50,000.00	....
Current Liabilities—Accounts Payable	$22,000.00	$14,000.00	$8,000.00
Surplus	$12,500.00	$4,000.00	$8,500.00
Total	$84,500.00	$68,000.00	$16,500.00

Assuming no profits to have been withdrawn, it is apparent that net earnings from all sources amounted to $8,500 during the year. The nominal accounts, of course, would show the *source* of the earnings. But, where *are* the earnings, and where are they represented in the net resources of the company? An analysis of the transactions during the year would show that in general, the liquid assets had been undergoing a continuous process of conversion from one form to the next, as given in the following order:

Raw Materials,
Work in Process,
Finished Stock,
Accounts Receivable,
Cash.

It would show also that the cash received, representing in part the ultimate realization of a portion of the profits from sales, and in part simply a return of original costs of production and operation, had been used to liquidate indebtedness incurred in acquiring new plant property or additional raw materials. Not being able to "ear-mark" dollars, we cannot state, for instance, that the increase in property and plant, $7,000, as shown, represents the investment of that amount of profits. But, by using the increases and decreases only, the following interesting statement may be obtained:

Increase in Capital Employed in the Business During the Year Ended December 31, 1916

Increase in Fixed Capital—Plant Property and Equipment			$7,000.00
Increase in Current Capital:			
Increase in Accounts Receivable		$8,000.00	
Increase in Inventories		3,500.00	
Total		$11,500.00	
Less:			
Decrease in Cash	$2,000.00		
Increase in Current Liabilities	8,000.00	10,000.00	
Net Increase in Current Capital			1,500.00
Total Increase in Capital Employed in the Business, Representing the Net Profits For the Year			$8,500.00

Assume further that at December 31, 1917, a statement of the same concern is prepared which shows as follows:

General Balance Sheet, December 31, 1917, Showing Increases and Decreases by Comparison with December 31, 1916

	December 31, 1917	Increase *Decrease
ASSETS		
Property:		
Land and Buildings	$55,000.00	$15,000.00
Machinery and Equipment	14,000.00	3,000.00
Total Property	$69,000.00	$18,000.00
Current Assets:		
Cash	$1,500.00	$500.00
Accounts Receivable	$15,000.00	*$3,000.00
Inventories:		
Finished Stock	$4,000.00	*$3,000.00
Work in Process	2,000.00	500.00
Raw Materials	5,000.00	*1,000.00
Total Inventories	$11,000.00	*$3,500.00
Total Current Assets	$27,500.00	*$6,000.00
Total	$96,500.00	$12,000.00

General Balance Sheet, December 31, 1917, Showing Increases and Decreases by Comparison with December 31, 1916—(*Continued*)

	December 31, 1917	Increase * *Decrease*
LIABILITIES		
Capital Stock	$50,000.00	....
First Mortgage Gold Bonds	$25,000.00	$25,000.00
Current Liabilities—Accounts Payable	$13,000.00	**$9,000.00*
Surplus	$8,500.00	**$4,000.00*
Total	$96,500.00	$12,000.00

During the year, a dividend of 10%, or $5,000, was declared and paid, although actual profits from operations amounted to only $1,000, and the company sold bonds at par for $25,000. The significance of the changes in the financial complexion of the company's affairs is brought out as follows:

Increase in Capital Employed in the Business and the Sources from which Derived, During the Years Ended December 31, 1917 and 1916

	Year Ended December 31	
	1917	1916
Increase in Fixed Capital—Plant Property and Equipment	$18,000.00	$7,000.00
Increase in Current Capital:		
Increase in Cash	$500.00	†$2,000.00
Decrease in Current Liabilities	9,000.00	*8,000.00
Total	$9,500.00	†$10,000.00
Less:		
Decrease in Accounts Receivable	$3,000.00	*$8,000.00
Decrease in Inventories	3,500.00	*3,500.00
Total	$6,500.00	*$11,500.00
Net Increase in Current Capital	$3,000.00	$1,500.00
Total Increase in Capital Employed in the Business	$21,000.00	$8,500.00
Sources from which Derived:		
Increase in Bonded Indebtedness	$25,000.00	....
Earnings for the Year	1,000.00	$8,500.00
Total	$26,000.00	$8,500.00
Less Capital Disposed of—Dividend Declared and Paid	5,000.00	....
Remainder	$21,000.00	$8,500.00

† Decrease. * Increase.

GENERAL BALANCE SHEET, DECEMBER 31,

ASSETS	December 31		Increase *Decrease
	1917	1916	
Property	$5,309,542.00	$5,133,145.00	$176,397.00
Investments:			
Capital Stocks of Affiliated Companies	$452,250.00	$25,000.00	$427,250.00
Other	719.00	719.00	....
Total Investments	$452,969.00	$25,719.00	$427,250.00
Current Assets:			
Cash on Hand and on Deposit	$39,141.00	$13,149.00	$25,992.00
Notes Receivable	7,450.00	840.00	6,610.00
Accounts Receivable	402,281.00	147,110.00	255,171.00
Accrued Interest Receivable	317.00	82.00	235.00
Materials and Supplies	40,184.00	29,268.00	10,916.00
Total Current Assets	$489,373.00	$190,449.00	$298,924.00
Special Deposits:			
Cash on Deposit with Trustee under General Mortgage	$856.00	$35,477.00	**$34,621.00*
Cash on Deposit with Trustee of Sinking Fund for the Retirement of First Mortgage Bonds	6,585.00	15.00	6,570.00
Total Special Deposits	$7,441.00	$35,492.00	**$28,051.00*
Deferred Charges:			
Insurance Premiums Paid—Unexpired Portion	$3,562.00	$308.00	$3,254.00
Prepaid Interest on Notes and Accounts Payable	4,731.00	1,152.00	3,579.00
Taxes Paid in Advance	4,710.00	3,855.00	855.00
Total Deferred Charges	$13,003.00	$5,315.00	$7,688.00
Total	$6,272,328.00	$5,390,120.00	$882,208.00

Exhibit A

1917 AND 1916, AND COMPARISON

LIABILITIES	December 31		Increase *Decrease
	1917	1916	
First Preferred, 6%, Cumulative Capital Stock	$1,350,000.00	....	$1,350,000.00
Second Preferred, 6%, Capital Stock	$1,000,000.00	$1,000,000.00	....
Common Capital Stock:			
Issued	$1,000,500.00	$1,000,500.00	....
Less:			
Held in Treasury	385,500.00	385,500.00	....
Remainder—Outstanding	$615,000.00	$615,000.00	....
Funded Debt:			
First Mortgage, 5%, Gold Bonds—Outstanding	$2,253,000.00	$2,425,000.00	*$172,000.00*
Five-year, 5%, Coupon Notes	....	1,000,000.00	*1,000,000.00*
Total Funded Debt	$2,253,000.00	$3,425,000.00	*$1,172,000.00*
Contract of Purchase—Property	$71,200.00	....	$71,200.00
Current Liabilities:			
Notes Payable	$237,500.00	$62,500.00	$175,000.00
Accounts Payable	388,759.00	75,625.00	313,134.00
Interest Matured but Unpaid	3,202.00	462.00	2,740.00
Accrued Accounts:			
Interest on Funded Debt	46,937.00	50,520.00	*3,583.00*
Interest on Notes and Accounts Payable	6,102.00	....	6,102.00
Taxes	9,311.00	1,480.00	7,831.00
Rent	3,441.00	678.00	2,763.00
Total Current Liabilities	$695,252.00	$191,265.00	$503,987.00
Deferred Credits:			
Unearned Rentals	$2,005.00	$2,491.00	*$486.00*
Unearned Interest	31.00	1.00	30.00
Total Deferred Credits	$2,036.00	$2,492.00	*$456.00*
Reserves:			
Depreciation of Property	$40,288.00	$37,380.00	$2,908.00
Doubtful Accounts Receivable	4,658.00	2,479.00	2,179.00
Loss in Miscellaneous Investments	719.00	....	719.00
Contingencies	20,000.00	60,000.00	*40,000.00*
Total Reserves	$65,665.00	$99,859.00	*$34,194.00*
Surplus	$220,175.00	$56,504.00	$163,671.00
Total	$6,272,328.00	$5,390,120.00	$882,208.00

Exhibit A

Statement Showing Increase in Capital Employed in the Business and Sources from which Derived, for the Year Ended December 31, 1917

Increase in Invested Capital:			
Property		$176,397.00	
Less:			
Increase in liability under contract of purchase—Property	$71,200.00		
Increase in reserve for depreciation of property	2,908.00		
Decrease in cash on deposit with trustee under general mortgage	34,621.00	108,729.00	$67,668.00
Investments:			
Capital stock of affiliated companies		$427,250.00	
Less increase in reserve for loss in miscellaneous investments		719.00	426,531.00
Cash on deposit with trustee of sinking fund			6,570.00
Decrease in first mortgage, 5%, gold bonds			172,000.00
Total			$672,769.00
Decrease in Net Current Capital:			
Increases in liabilities:			
Notes payable	$175,000.00		
Accounts payable	313,134.00		
Interest matured but unpaid	2,740.00		
Accrued interest on notes and accounts payable	6,102.00		
Accrued taxes	7,831.00		
Accrued rent	2,763.00	$507,570.00	
Less:			
Increases in assets:			
Materials and supplies	$10,916.00		
Cash on hand and on deposit	25,992.00		
Notes receivable	6,610.00		
Accounts receivable, less reserve for doubtful accounts	252,992.00		
Accrued interest receivable	235.00		
Decrease in liability—Accrued interest on funded debt	3,583.00	300,328.00	207,242.00
Increase in Net Tangible Capital			$465,527.00
Increase in Intangible Capital:			
Insurance premiums paid—Unexpired portion	$3,254.00		
Prepaid interest on notes and accounts payable	3,579.00		
Taxes paid in advance	855.00		
Decrease in rentals received in advance	486.00	$8,174.00	
Less:			
Increase in interest received in advance		30.00	8,144.00
Increase in Capital Employed in the Business			$473,671.00

Sources from Which Derived:		
Increase in first preferred, 6%, cumulative capital stock..	$1,350,000.00	
Less:		
Decrease in five-year, 5%, coupon notes............	1,000,000.00	$350,000.00
Increase in surplus..................................	$163,671.00	
Less:		
Decrease in reserve for contingencies..............	40,000.00	123,671.00
Total..		$473,671.00

Exhibit B

The foregoing Exhibits A and B illustrate, respectively, the setting forth of the financial conditions at the end of two different periods, with comparisons, of a concern having more or less complex accounting features, and the restatement of the increases and decreases in the various accounts in accordance with the methods heretofore developed:

The statements just given illustrate the manner of presenting increases in capital employed in the business and the sources from which they are derived. The following titles indicate the purposes of certain other forms of statements which set forth the changes in financial resources with particular regard to one group thereof:

Increase (or Decrease) in Fixed Capital, and Sources from which Derived (or Disposition Thereof).

Increase (or Decrease) in Working Capital, and Sources from which Derived (or Disposition Thereof).

Increase (or Decrease) in Total Resources, and the Application Thereof.

It is apparent that all such statements are based upon the increases and decreases shown by comparative balance sheets, after determining, with respect to each item, its relation to a certain main group of items.

In conclusion, it has been the writer's attempt to emphasize the importance in the administering of a business, of having a constant knowledge of the trend of the flow of resources. The question "where are our profits?" is answered by the preparation of statements setting forth, in logical arrangement, the various increases and decreases in the asset and liability accounts. The answer to the question "what shall be our policy in respect to the disposition of our future profits?" becomes relatively simple and clear in the light of full understanding of the results of the past, as afforded by such statements. A broadened administrative horizon as well as increased business efficiency must result from their study by directors and officers.

DEFLATION OF SALARY COSTS DURING DEPRESSIONS

BY J. PRYSE GOODWIN*

UNDOUBTEDLY the present and pressing problem of all offices is lack of business and what to do with salaried employees. Depression prevails just now both in industrial and financial fields and may perhaps be expected to continue until European exchange has been righted, enabling our best customers once more to do business with us.

In industrial fields during the period of expansion due to the war, it was the practice to increase rates of pay and also to pay overtime.

In the same fields during the period of depression following the armistice, the old practice of laying off individual workers was resorted to until industrial engineers got a hearing and were able to convince large employers of labor that "firing" the workers was an inhuman and wasteful policy, and to suggest the better plan of "firing" the hours.

The writer recalls that the first occasion he had of making this suggestion was at the time of the armistice, to the general superintendent of a plant employing normally 4000 men increased to 5000 men during the war and working 10 hours a day with 11 hours' pay. Then came the armistice followed by cancellation of war orders and products coming through in excess of sales and warehouse capacity. The suggestion that the condition be met by "firing" so many hours instead of "firing" the extra 1000 men was first laughed at, then considered, and later adopted, and orders went out to retain everybody but to operate only three days a week. Gradually as business recovered they increased to four days and then to five days and then five and one-half days of eight hours, all the while holding together the entire organization. The success of this policy is illustrated in that while their competitors have been passing dividends this company has been able to maintain its usual rate.

The above is cited as an example of the opposition that is usually met by new ideas and it will be noted that the opposition did not come from the workers but from the superintendent and general manager, high caliber people not afraid of their men but hesitant to adopt anything new relating to the handling of men. However, times have changed. Factory management has made rapid strides and the policy of laying off individual employees during periods of depression is giving way to the more humane and efficient policy of operating on part time. "Fire" the hours rather than the employees says the modern executive. This plan has been proved to operate with such success, that it has met with general adoption in industrial fields, enabling the burden of unemployment to be shared by all employees rather than being borne by an unfortunate few and making it possible for the employer to keep his organization intact, thereby placing him in an advantageous position over his competitors when business revives.

In financial fields during the same period of expansion both during the war and since, it has been the practice to endeavor to maintain normal salaries but to augment the same with bonuses, these bonuses in many cases reaching high standards of liberality.

* Industrial Engineer, New York City.

In dull times the policy of retrenchment applied to clerks as distinguished from industrial labor usually takes the form of—first, to reduce the size or eliminate the bonus, and second, to make reductions in the staff, letting out first those most recently hired or the inefficient.

The policy of "firing" the hours rather than the employees appears never to have been attempted among office employees with perhaps the exception of the period when the Stock Exchange was closed, when certain stockbrokers adopted this method.

The policy of discharging office employees during temporary periods of depression is unscientific for five main reasons:

1. Knowledge of the letting out of office employees is bound to get around, injuring the good name and also perhaps the credit of the houses affected.

2. Office organizations are disrupted and the confidence of the other employees is shaken.

3. The families of those who are discharged bear the entire suffering which is, of course, unfair and brings about a disturbance of the social order tending to incite to crime.

4. Help has again to be hired when business revives and is frequently inefficient.

5. Executive salaries seldom are reduced, thereby handicapping the organization in the future whereas acceptance of a cut by executives would aid in its acceptance by the rank and file.

This policy can, therefore, be criticized as unjust to the employees and costly and wasteful to the employer.

Considerable courage is perhaps required on the part of employers and office managers to introduce a policy of sharing the depression just as one shares profits. Yet, after all, is not "firing" the hours rather than the clerks the only fair thing to do, and what hurts men of wealth and education more than the letting out of humble employees during periods of depression?

With clerical help as distinguished from labor, it is perhaps not possible to operate on a part-time basis but it is possible to operate on a part-staff basis, covering all the duties with some of the staff one week and with the others the next week, always keeping in touch with the absent ones in case of a sudden increase in business. This plan would appear to be meeting with success in some of the larger stores where employees are being given extended vacations at their own expense to their mutual satisfaction.

Were the foregoing plan not feasible, a general cut in salaries as has been suggested by the railroads is surely preferable to the discharge of individual clerks, imposing on the few unfortunates the entire burden of the depression while their associates continue to draw their full salaries.

One might be met with the objection that not all the employees would accept a general cut in salaries even though for the general good. The noble sacrifices made during the war have shown this to be an unworthy misconception of human nature, but should there be any who object to making a small personal sacrifice for the general benefit, they can be expected to change their opinions over night on learning that their names are included among those to be let out.

Instances have arisen recently in New England where employees themselves have petitioned their employers to make a general cut in wages so that their plant might continue to operate. Such incidents show what a large amount of suffering can be eliminated in transition periods like the present and indicate how great are the economic advantages that can be obtained by a "Get Together" policy in the analysis and control of a business.

A SPECIFIC SHOP-ORDER PLAN

BY T. J. KING*

"SHOP order" rather connotes something closely related to or intimately associated with purely production routine or the gathering of shop costs. As a matter of fact the shop-order plan to be described in this article is related to production control only in a very general way. Like so much commercial terminology, the designation is the child of usage among its forbears. Clarity to the world at large did not have a place at the christening.

A brief statement of the problems solved by the "Diamond" shop-order plan may serve best to bring about a better understanding of the plan itself. They are the problems of most manufacturers of a staple product, more especially those of the maker of parts and supplies; in a lesser degree those of the specialty manufacturer and, possibly, even of the merchant, because they are in their larger phases problems of inventory control, turnover increase, service of supply, and uniform rate of manufacture and sale.

The product dealt with is machined steel sprocket chain of the type used for equipment of bicycles, motor-cycles, motor trucks, and for transmission of power. Although demanded in a great variety of models and sizes it is a staple, standardized commodity which need not be manufactured to the peculiar requirements of a customer's order. It is sold by the foot. Length only varies with the individual order.

The chain-maker is a parts-maker—pure and simple. He may extend his field in point of number of chain users served or find new applications for his product, but the existing chain market at any given time is beyond his power of stimulation or control. The chain demand is a reflection of the machine builders' requirements. No practical method of anticipating demand with reasonable accuracy has ever been devised and probably never will be.

Yet the chain-maker is called upon to supply what is wanted and on rather short notice. Chain being a staple product not requiring further manufacture and usually assembled by the machine builder when his own product is nearing completion, the need is commonly not long anticipated in buying.

There is a simple finished stock problem, but difficult demand and service problems—conditions quite usual with staple products.

Steels used in chain manufacture are highly special as regards size, analysis, and processing at the mills. Relatively few items are used in more than two models while many are used only in one width of a single model. Rarely are these steels found in warehouse stocks, and mill deliveries are commonly slow. Such conditions invite large and badly unbalanced raw stocks. The purchasing department must be able to supply on short notice and without the aid of a dependable demand estimate, materials slow in procurement.

Chain of this type has always been manufactured on a close margin. Competition is keen as in most staple lines. Manufacturing cost is of more than ordinary importance. Consistently, favorable costs can be obtained only if the plant is operated steadily at a well-balanced, reasonably uniform rate and with the fewest possible

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"runs" below economical size. The manufacturing department must be isolated, in the greatest measure possible, from the varying conditions of the raw material market and the demand for the finished product. Further, to complicate both the manufacturing and sales problems, plant equipment is somewhat inflexible because of the wide range of sizes and variation in tool equipment. Uniform, balanced manufacture, therefore, requires not merely a uniform total footage daily, but a daily rate balanced and uniform as regards each class of product.

And, then, our esteemed friend the chancellor of the exchequer! His desire for profits and a good balance sheet constantly demands a higher turnover and a smaller inventory—a demand difficult to satisfy in an industry in which the turnover has been consistently low and inventory traditionally large. Yet, greater profits through higher turnover and smaller aggregate inventory (raw and finished) are the chief objective of the plan.

The "Diamond" shop-order plan is merely the outcome of the close coordination of the naturally conflicting interests of sales, manufacturing, and purchasing into a co-operative combination for placing the institutional interests above all others. The "supreme council" is the schedule committee composed of the general manager, purchasing agent, works manager, and sales manager, but so thoroughly does each department head appreciate the problems of the others that determination of the final shop order is seldom more than a perfunctory procedure.

Aside from genuine co-operation, if there are any factors more vital than all others in the shop-order plan they are the classification of the various items of the product into manufacturing groups and the determination of daily rates of desired production or the group objective to be produced and sold. These objectives may be changed at intervals to meet general business conditions, but changes are discouraged and are not made from month to month to reflect temporary fluctuations.

When the plan was instituted a careful analysis was made of past sales and probable demand for the purpose of establishing a stock standard for each item of product. With some modifications, the finished stock standard for a particular item bears the same relation to its group objective as does the probable demand for that particular item to the total probable demand for all items in the same group. Finished stock standards were next converted to terms of raw stock, similar items consolidated, and the total of each modified by variety of use and time required for replacement, to arrive at raw stock standards. In place of the usual maximum-minimum quantity standards, inventory control is entirely by percentage of standard, both finished and raw stock standards representing 100 per cent. Unlike group objectives, stock standards may be changed at any time. The manufacturing department has no interest in stock standards so that changes in no way affect manufacturing problems. Such changes, however, must not affect the group total, decreases being offset by increases or vice versa unless the group total or objective for manufacture and sale is also changed.

Separate "liquidation objectives" in terms of percentage of standard, are established by the general manager for both raw and finished stocks, varying with business conditions.

The suggested shop order which covers one month's production, originates in the sales department. That department controls orders, packing, shipments and all finished stock. From the order and stock account record is prepared the shop-order data showing:

1. Model.
2. Actual stock.
3. Shop-order status.
4. Total of 2 and 3.
5. Orders on file.
6. Stock remaining (4 minus 5).
7. Per cent 6 is of finished stock standard.
8. Per cent to make to reach liquidation objective.
9. Feet to make to reach liquidation objective.
10. Suggested shop order.

Shop-order status indicates status of production on established shop orders and is added to actual stock because it represents in effect chain "purchased" of the factory by the sales department. Should the factory show an overrun the quantity is deducted from actual stock since the manufacturing department will deduct the overrun from the next shop order received.

Orders on file include merely firm orders for delivery through the month for which the shop order is being compiled. Futures beyond the shop-order month as well as important outstanding quotations and probable seasonal runs are considered but are not directly figured into the shop-order data where they might be misleading and result in overproduction on some items to the detriment of others where production is more needed.

The group objective, or desired rate of production, having been determined, the process of arriving at the suggested shop order for that group is quite simple and amounts to but little more than placing the desired quantity where sales of the previous month and market prospects indicate it will be the most salable. Here it is interesting to note that the plan provides in general for all shipments from stock rather than from production, the latter merely being a constant controlled replacement of stock used or hypothecated by sales.

Shop-order data on the first of each month are at present being used as a basis for the shop order of the next month following, i.e., the September shop order is based on status as of August 1, and the final shop order for September determined by August 8. But if a more active market should arise, requiring a closer tie-up, the manufacturing department can accept the final shop order as late as the fifteenth of the month, which can be prepared on data as of the tenth of the month. Much of the success of the plan is due to the ability of the manufacturing department to put the monthly shop order into production with so little as 15 days' time for preparation of production routine and processing before commencement of assembly.

From the data as described, the sales department prepares the suggested shop order, a copy of which is sent to the works manager and purchasing agent. General consideration is given to raw stock and manufacturing conditions in preparation of the suggested shop order but usually it reflects directly the needs or wishes of the sales department. The manufacturing and purchasing departments return this "suggested shop order" to the sales department within 24 hours, indicating approval or criticism. The sales department then makes out a recommended shop order meeting the wishes of the other departments to the greatest extent possible without detriment to sales interest, and presents the whole to the schedule committee where differences are threshed out and the "final shop order" determined.

So far the transaction has been entirely in terms of feet of chain. Next, the manufacturing department converts the final shop order into terms of items of raw stock by pounds, and requisitions the needed material from raw stores which are controlled by the purchasing department. On receipt of

the shop order the purchasing department makes a monthly survey of raw stock status, deducting the amount requisitioned. All items showing a percentage of standard below the liquidation objective set by the general manager, are marked for purchase.

Inventory control will be one of the difficult, major problems for some time to come. Valuation on the balance sheet will be merely incidental. Relation of raw and finished inventory to the price market, availability of supply, and market demand will be important. Balanced condition of inventory will be exceedingly important. Raw inventory especially must be so perfectly controlled and so responsive to liquidation and extension that every advantage may be gained by anticipation of price changes and strikes, transportation delays or other factors affecting availability of supply. While material prices are falling, raw stocks should be kept low but nicely balanced; in the meantime, finished stocks should be built up and balanced to meet the scarcity of supply which will inevitably mark the return of demand. As that demand is being satisfied and material prices reach bottom, finished stocks may be reduced and a greater reserve carried in raw material. If, as some economists predict, there will be a series of fluctuations for some time to come, advantage of the situation can be gained only by an inventory control that is simple, almost immediately responsive, and quite automatic in its preservation of a balanced condition.

Manufacturing cost presents another problem. The factory must operate steadily and at an economical rate which should gradually increase with the return of prosperity, but this increased rate of production should be accomplished without any sense of pressure except that exerted toward high quality and low cost. To accomplish this, the manufacturing department must be cushioned against the problems of sales and purchasing.

A buyer's market will prevail for a long time. Short buying will be the rule—service the demand. Service—more especially quick delivery—will be the principal factor in sales after prices are readjusted and will not yield to price or quality until operations approach a settled normal basis. Service requires ample stocks of finished material quickly replaced by a close connection of production and purchasing with sales.

To sustain balanced production and to maintain balanced inventories, requires balanced sales. Certainly it would be foolish to hold back sales on items showing strength, yet it would be equally foolish to concentrate sales effort on such items to the neglect of weak spots with the result of badly unbalancing stocks and production. The shop-order plan automatically shows monthly the weak spots and indicates items for the concentration of market analysis and intensive sales effort.

Just arbitrarily buying when the barometer shows raw stock at "50 below," or not until then, will lose many dollars. Perhaps the corresponding finished stock items are long, or are moving slowly, and buying might be postponed a month or two for a better market. Perhaps raw stock is above the buying point but the market is favorable and finished stock items are low. Under the shop-order plan the purchasing and sales departments talk the same language. When the market looks right to buy or the barometer says buy, they are able to check up. "Standard" has a common meaning to each. Raw and finished stocks are pooled instantly, applied to estimated demand and time for replacing raw material. The difficult question, "Shall we buy?" is answered quickly.

BURDEN ABSORPTION FOR ADMINISTRATIVE CONTROL

BY ADOLF L. HAMBURGER*

THE problem of overhead distribution is one of the most interesting and difficult with which cost accounting has to deal. It is often neglected because of its difficulty and because proper distribution would increase this very "overhead" which is under discussion. But an appreciation of its significance may mean the difference between the success and failure of a factory.

There are in the main two ways in which burden or overhead may be distributed: by the machine rate (or direct labor) method, or on the basis of a charge to each unit of production.

Executives who are busy with their many problems may feel that one distribution of burden is quite enough, but a double distribution, which permits of a comparison of the data obtained, brings out vital information.

It may be found, for instance, that burden is absorbed when distributed by machine rates, or labor hours, but not when distributed on the basis of the estimated unit charge. The first fact would show merely that the plant is run long enough to absorb the burden—and that is all the information that is usually obtained. The fact that the estimated unit charges do not absorb the overhead would show that the plant is not run on an efficient basis or that some unexpected factors are present.

The cost accounting described in this article is for factories where the manufacturing consists of repetitive processes and the making of a large number of articles. Shoe, clothing, toy, and certain steel factories are examples of the kind of factories in which it may be used to advantage.

In this discussion, the following formulas for the determination of unit burden will be made use of:

$$1.\quad \frac{\text{Actual burden cost}}{\text{Actual production}}$$

For ease of reference it will be termed the AA burden cost.

The burden absorption by machine rate, here termed the BA charge, is found by the formula:

$$2.\quad \frac{\text{Machine rate} \times \text{number of hours run}}{\text{Actual production}}$$

And the unit burden absorption charge is

$$3.\quad \frac{\text{Estimated absorption per unit} \times \text{actual production}}{\text{Actual production}}$$

This will be called the EA charge. In all three cases "actual production" is the common denominator so all charges are unit costs and hence may be compared.

A chart should be made with the range of units produced as the horizontal, and the unit burden costs as the vertical axis. At the end of each accounting period, points should be made on the chart showing the unit burden cost or charge obtained by the formulas given above. After the second period the respective sets of points should be joined and, after a

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time, curves may be drawn. It is important to remember that the time factor is not shown. After a number of periods have been charted, all from the same axes, the first period may perhaps show in the middle, the second on the left, and the third on the right of the chart. There is thus an overlapping of data for the different periods, dependent upon the volume of production during the various periods. The main function of the chart is the determination of what "standard" production should be for most efficient operation.

Such a chart is on the next page. It should be kept before the reader during the entire discussion. The curve showing actual burden costs for various amounts of production will be irregular. As production increases, the curve will fall rapidly, then will run nearly on a level, and finally will rise. It will fall below and rise above the other curves. Up to a certain amount of production the factory will be operating under the law of increasing returns and so the unit costs will decrease. When production has passed that point the unit costs will rise as the law of diminishing returns sets in. The latter phenomenon is not so common as the former but there were ample illustrations of it during the war when many factories produced more than they were equipped to produce, but did so at a greatly increased unit cost.

Comparison of the AA curve showing the actual burden with the ones showing estimated absorption at various amounts of production is very interesting. When production is best suited for the factory, the BA curve indicating the time that the machines must be run is below the EA curve, that of estimated absorption by output. This means that the machines are in balance and are operating at maximum efficiency. After a certain point, however, the rate of production decreases more quickly than in proportion to the time it is necessary to run the machines and therefore the unit charge to production by the machine rate becomes higher than the estimated charge. In other words, if in order to produce one thousand units the machines were run five hundred hours, they would have to be run about three hundred hours to produce five hundred units. This would happen because machines bigger than necessary would be used and the lots in which the goods were manufactured would be smaller than they should be for economical production.

If, on the other hand, the production were too high the work would be congested and there would not be proper adjustment between the different machines. In either case great inefficiency results.

Let us examine in detail the positions of the curves at the various amounts of production.

When the production is below 60,000 units EA < BA < AA. This is a very bad situation. Since AA is greatest the burden is not absorbed and to that extent money is being lost. As EA < BA the machines are not well adjusted and are run longer than they should be for the production obtained.

Between 60,000 and 65,000 units the situation is still bad, BA > AA > EA. The burden is absorbed by the machine-rate method because the machines are run a longer time, but there is not economical production, since the estimated absorption per unit times the number of units manufactured is less than the actual costs.

Suppose the actual costs were $15,000; the estimated unit charge 20 cents or $14,000 for 70,000 units; the machines were run 16,000 hours at an average charge of one dollar an hour.

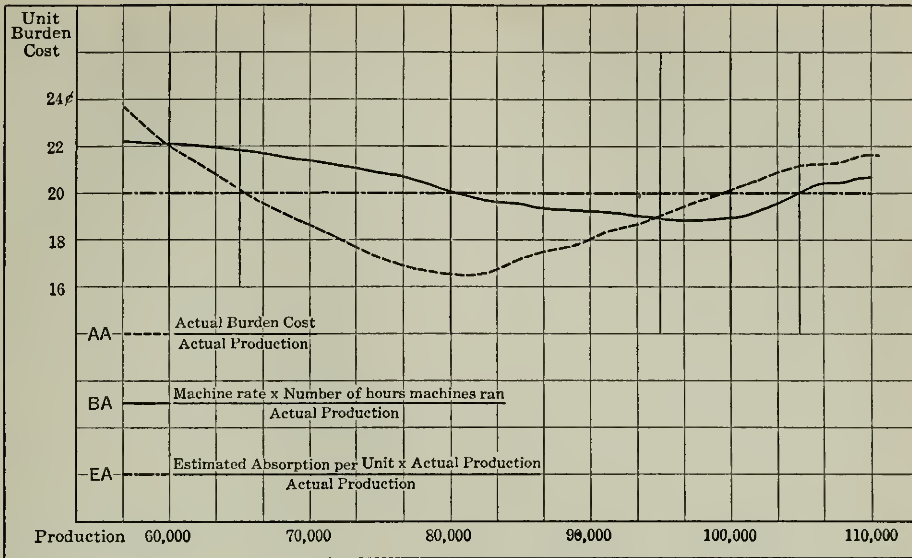


Chart of Burden Absorption

This would show that enough was being charged on the goods produced to more than cover expenses; but that with that outlay of funds there should have been much more production.

The situation is fairly good between 65,000 and 80,000. BA > EA > AA. The burden is absorbed both by units produced and the number of hours the machines were run. But the machines are still run too long for the production that is obtained. This would probably be caused by lack of balance between the machines.

In this factory it would be most economical to manufacture between 80,000 and 95,000 units. Then, EA > BA > AA. This shows that the machines are producing more per hour than was expected and that the actual burden costs were well absorbed. It should always be the aim of the management to keep the curves in this position.

Theoretically all three curves should meet at the point of estimated or standard production. But this would mean that the burden cost would have to be exactly what was estimated and that the machines would have to be run exactly the number of hours expected. This would never happen in practice. The curves all come close together between 95,000 and 100,000 units, which was the estimated production, and although they may come close in practice they will never meet.

The estimated or standard production, 100,000 units, is not the most efficient amount for the factory to produce. Between 95,000 and 100,000 units EA > AA > BA. The machines are operating very efficiently; but costs are rising so quickly that the machines can no longer be run enough to absorb them. This is because every time they are used an extra hour, more than a compensating increase in unit costs is incurred for the units produced.

Between 100,000 and 105,000 units AA > EA > BA. The burden is no longer absorbed but the plant is still being run so that production is efficient. This is probably the fault of the ac-

counting department which presumably has failed to foresee that this production would involve large additional expenses. For instance, a new power plant might have to be opened, or extra foremen hired, or the depreciation on the machinery by wear and tear might be accelerated. Such additional expenses call for an increase in the machine rate, which, of course, would increase BA. If this condition obtained at 60,000 production the blame should be placed on the sales department because the curves would show that although the manufacturing department was operating efficiently the machines were not running long enough to absorb the costs. In this case the production is standard and as the plant is operated efficiently the machine-hour rate must have been incorrectly established.

When more than 105,000 units are made the same condition occurs as when less than 60,000 are produced. The burden is not absorbed and the machines are run more than they should be for efficient production.

Let us examine the chart in order to see what help it will give in planning a manufacturing policy. Obviously it is most desirable from the standpoint of greatest profits per unit to manufacture between 80,000 and 95,000 units. It will be possible to make as much as 100,000 or as little as 65,000 occasionally and there will be no ill effects.

If the production goes above 100,000, and certainly if it goes above 105,000, the equipment must be increased and the plant expanded. Suppose with a production of 95,000 units the profit per unit was ten cents; at 110,000 it may be only nine cents because of the maladjustment of equipment. In the one case, $9,500 would be made, and in the second, $9,900. However, if the machinery were increased sufficiently so that the profit could be brought to $11,000, or ten cents per unit, there would be a net increase in profits of $1,100 a period of four weeks or $14,300 a year. Figuring interest on the machines at 5 per cent and depreciation at 10 per cent, almost $100,000 could be spent for machinery, and even if there were no more business than 110,000 units the same profit would be made. But with the increased facilities more business would be sought and since the demand is already evidenced it would be obtained.

The production could fall to 65,000 with not much more than a proportional decrease in profits. At 50,000, it is, however, safe to assume that the profits per unit would fall as low as six cents. The profits on 50,000 units would be $3,000 in contrast to $9,500 at a production of 95,000 units. This should impress on the management the necessity of maintaining production. If the articles manufactured were trade-marked it might be advisable to sell some unbranded at a lower price or to decide on a "dumping" policy in order to get rid of the surplus in bad times.

Suppose the articles sold at 50 cents a piece. When 100,000 were manufactured, they cost 40 cents to produce. When 50,000 were manufactured, they cost 45 cents. So the profits on 100,000 would be $10,000 and on 50,000 only $3,000. But suppose 100,000 were manufactured and 50,000 sold at 50 cents. The profit on these would be $5,000 and if the rest were "dumped" or sold unbranded at cost there would be a 67 per cent increase in profits. If they could be sold at 42 cents so that the profits would be only two cents a unit, $1,000 could be made on the second 50,000 and the increased profits would be 100 per cent. It is

therefore extremely important for the management to know just where its plant can produce most efficiently. If the fall in demand were only temporary, it would clearly be advisable to manufacture 90,000 and store the excess until the demand again increased.

A chart such as this one would help the management decide on such policies and would enable it to compare the value of manufacturing an even amount throughout the year with that of closely following the sales orders. In this case it would be best to manufacture for stock when sales fell below 65,000 units a period; but not to manufacture more than 95,000 units if the customers would wait for deliveries.

Where the burden absorption is by direct labor hours instead of on a machine-rate basis, as in a factory where the work is done largely by hand, such a chart as this one would throw light on one of the most important social and economic problems of the day. It would permit a scientific determination of the proper number of working hours.

It is assumed in this discussion that the number of workers is constant and that the difference in number of hours is due to the time they worked rather than any change in the number employed. When production is high and the absorption by hours is greater than the estimated absorption by output, it may show that the men are fatigued and that the number of working hours is too great.

When the time worked is too short the unit absorption by hours will also be greater than the estimated absorption by production because the additional efficiency due to increased production, because of the saving of the worker's energy, is not sufficient to compensate for the loss occasioned by decreased production.

But when the work is properly adjusted to the worker's strength, the estimated charge per unit will exceed the hourly burden charge. This shows that the hourly production is more than was expected. Thus, the point at which the absorption by production is most above the one showing absorption by hours worked gives the most effective number of working hours, and dividing this by the number of men, we obtain the ideal number of hours that should be worked by each man during the period.

Such data as have just been described would be of great value in throwing light on the comparative economic and social value of a 44, 48, or 54-hour week, and would show what savings or losses would result by the adoption of Lord Leverhulme's plan of a six-hour day.

In this way, the effects of fatigue can be ascertained and the most economical number of hours of work in a particular industry can be found. This would be of great value because it would put on a firm foundation a discussion between capital and labor which has unfortunately degenerated into a battle of invectives.

PLANT ORDER AND REGISTER DIVISION OF INVENTORY CONTROL

BY CLINTON E. WOODS *

PLANT orders are the medium of control over all activities affecting the upkeep and betterment of a plant. That is, they are used to convey the authority for, and set in motion the action for, the purchase, sale, manufacture, erection, demolition, or movement of equipment and other property, as classified under fixed assets, as well as the repair of such equipment, and all maintenance and other expense work, the estimated cost of which exceeds a predetermined amount, except as otherwise directed for tools, or which may be chargeable to some factory account.

Any activity, estimated to cost over $10 and less than $25 should be authorized by a division superintendent or engineer before the plant order may be issued, and such work, estimated to cost over $25, should be authorized by the general superintendent. (See Form 1). If estimated to cost less than $10, the work is considered as operating expense and is chargeable to some factory account.

A plant order is initiated by any department head by making out a "request" for such order, stating in detail what is required and its estimated cost (direct labor and material only). This request (Form 2) is usually written on ordinary typewriter paper and should be addressed to the plant order and register department. It should, in all cases, contain a list of the departments which will be required to contribute effort toward the execution of the order.

As soon as received by the plant order division, the request is attached to a "Plant Order Authorization" form (Form 1) dated and sent to the superintendent concerned for approval. A follow-up record is at once made on each request so forwarded, in order to obviate oversights or other delays and to insure receipt back of *all* "authorizations," whether approved or not, so that appropriate action may be taken by the order section.

The foregoing procedure can be eliminated by the universal use of a regular plant order authorization form for this purpose. This would not only insure uniformity of paper work throughout, but would provide a record on *a single sheet* of all information and authority upon which a plant order is based.

Upon receipt back of the request with the necessary approval, the plant order is issued and the authorization is filed according to the department initiating the request.

The above procedure implies a lapse of considerable time between the initiation of a request and the issuance of a plant order. This is actually the case, but in cases of emergency where immediate action must be taken, authorization and the assignment of a plant order number to the work may be secured by telephone, and the confirmatory papers sent through afterward in the usual manner.

Except as indicated above, the issuance of a written plant order is the starting point for the performance of the work called for, and the number which it carries affords a key number against which all charges for material and labor are made. This is obviously

* Industrial Engineer; Receiver for the Bethlehem Motors Corporation, Allentown, Pa.

GENERAL SUPERINTENDENT'S OFFICE

PLANT ORDER AUTHORIZATION

DATE ____________ 19

NOTE:-ADDITIONAL SPECIFICATIONS AND DRAWINGS MUST BE ATTACHED TO THIS SHEET.

Estimated Labor and Hours		Estimated Material Costs		Estimated Labor. Material and Exp. Costs	
Estimated Time Required to Deliver	Days	Date Wanted			
Requested By		Signed		Department Head	
Plant Order No.	Issued	Order Dept.	Authorized By	General Superintendent Per	

ORIGINAL:-THIS COPY AFTER AUTHORIZATION TO BE FILED IN ORDER DEPARTMENT

Form 1. Plant Order Authorization

necessary in order that the proper accumulation of costs to the particular work concerned may be accomplished.

It is frequently a fact that a plant order calls for activities, involving effort or carrying values, which will affect the total value of several different fixed asset accounts. Therefore, in order to preserve correct inventories, as represented by the accounts concerned, it is necessary that the charges pertaining to each different asset account be readily identified so as to insure and facilitate the proper distribution of costs. This is accomplished by the issuance of a separate plant order to cover that part of the work as a whole which pertains to each separate asset account, giving to each of such orders the same base number but with a separate "dash" number affixed.

In addition, frequently, changes in the original order, which will extend or reduce the activities set in motion, are subsequently necessary or desired, and instructions to accomplish this must be issued properly. Accordingly, a further plant order to carry these instructions, and bearing the original order number with the word "add '1" added, is issued.

Each plant order (see Form 3) is prepared in triplicate, for distribution and to function as follows:

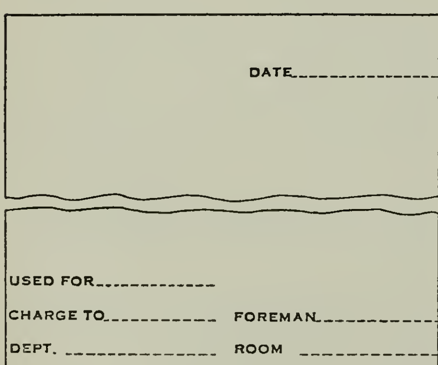
Original. To the register division of the plant order and register department, in cases where the order affects fixed assets, as a warning and to convey the information for the preparation of the asset cards to receive the record of the investments made. In the event of the order covering items of ex-

pense only, this copy is sent to the factory accounting department, as a warning to prepare the necessary cost cards.

Duplicate. To the general superintendent's office for information.

Triplicate. Retained by the order section for record. (This copy is held in an "open" file until the work is completed, when it is removed and placed in a "closed" file.)

In addition to the plant order department, the general superintendent's office issues plant orders. Arrangement has been made, however, by which all such orders are promulgated through the order section, such arrangement having as its object the preclusion of the possible issuance of two orders for the same work and to bring about the establishment and maintenance of complete records in a single file. (See Department Plant Order, Form 4).


DATE

USED FOR

CHARGE TO FOREMAN

DEPT. ROOM

Form 2. Request for Plant Order

The instructions, consisting of an exact copy of the original order, actually issued to the departments concerned in performing work on account of an order, are carried on this form, of which a single copy only is prepared and addressed to each department. It bears the same number as the original. Standard instructions are included thereon, directing that all materials needed for the work be drawn from stores on a requisition-delivery ticket (Form 5) and that the plant order number be shown on such requisition, that all daily time tickets (Form 6) for labor performed on account of the plant order show the order number, and that, when the work required of the department is completed, the order itself be duly signed to that effect, dated, and returned to the plant order department.

The last instructions above cannot always be complied with, hence, arrangement has been made with several of the service departments to report daily what orders were completed by them during the previous day. Since neither of these methods will be "airtight," however, close personal liaison with each department and with the work is necessary. (Plant Order Follow-up Record, Form 7).

Immediately upon the preparation of the plant order and before it is signed and issued, this form is filled out to show:

1. Asset account number.
2. Plant order number.
3. Subject (or condensed description of the work to be done).
4. Date of issue.
5. Names of departments to which department plant orders are being sent.

This is placed in an "open," or active, file according to the order number. When all work on the order is finished, the card is removed and placed in a "closed" file.

These files of cards function as a combined index of open and closed plant orders, and are further intended to assist in the follow-up of the progress of the work and to record the completion of the work.

As notification from a department is received regarding the completion of

CHARGE ACCOUNT NO.	GENERAL SUPERINTENDENT'S OFFICE	ORDER NO.
CHARGE CONTRACT NO.	**PLANT ORDER**	DATE
CHARGE DEPT. NO.		ESTIMATED COST LABOR & MATERIAL
		ACTUAL COST LABOR & MATERIAL
		ESTIMATED LABOR MATERIAL & EXP. COSTS
		ACTUAL LABOR, MATERIAL & EXPENSE COSTS

DATE WORK WAS ACTUALLY STARTED ISSUE CHECKED BY AUTHORIZED BY

WORK COMPLETED 19 SIGNED

ORIGINAL—THIS COPY TO COST DEPARTMENT

DUPLICATE—THIS COPY TO GENERAL SUPERINTENDENT'S OFFICE

TRIPLICATE—THIS COPY TO BE RETAINED BY ORDER DEPARTMENT

FORM 3. PLANT ORDER TO CARRY OUT INSTRUCTIONS

DEPARTMENT TO WHOM ISSUED	GENERAL SUPERINTENDENT'S OFFICE	ORDER NO.
	PLANT ORDER	DATE
	DEPARTMENT COPY	

AUTHORIZED BY

WORK COMPLETED 19 SIGNED

NOTE:-ALL MATERIALS NEEDED FOR THIS WORK MUST BE DRAWN ON A STORES REQUISITION AND THE NUMBER OF THIS ORDER SHOWN ON THE REQUISITION. ALL TIME TICKETS FOR WORK DONE ON THIS ORDER MUST SHOW THE ORDER NO.
DEPARTMENTS DOING WORK ON THIS ORDER MAY HAVE EXTRA COPIES ISSUED BY TELEPHONING REQUEST TO THE ORDER DEPARTMENT.
DEPARTMENTS DOING WORK MUST RETURN THEIR COPY TO THE ORDER DEPARTMENT WHEN WORK IS COMPLETED.

FORM 4. DEPARTMENT PLANT ORDER

CREDIT TO

REQUISITION—DELIVERY TICKET C № 71933

QUANTITY DELIVERED	UNIT	PRICE	AMOUNT

CODE	CLASS

USE SEPARATE REQUISITION FOR EACH ITEM	BLDG.	FLOOR	BAY	AISLE	BIN

CHARGE

ROOM

DEPT

ORDER

ACCOUNT

QUANTITY WANTED	CAT. NO. OR SIZE	POINT OF DELIVERY

DESCRIPTION OF ARTICLE

DATE

DEPT FOREMAN'S SIGNATURE

RECEIVED AND CHECKED BY		CREDIT ENTERED BY		COST CHARGE MADE BY	
SIGNATURE	DATE	SIGNATURE	DATE	SIGNATURE	DATE

ORIGINAL:—THIS COPY IS TO BE USED AS A DELIVERY TICKET WHEN FORWARDING ARTICLES TO MAKER OF REQUISITION, MUST BE RECEIPTED AND FORWARDED TO REQUISITION DEPARTMENT, AND FROM THERE TO COST DEPARTMENT.

DUPLICATE—THIS COPY IS TO BE IMMEDIATELY SENT BY THE MAKER TO THE REQUISITION DEPARTMENT

TRIPLICATE—THIS COPY IS TO BE RETAINED IN BOOK BY THE MAKER.

Form 5. Requisition Delivery Ticket

DAILY TIME TICKET

STARTED	POUNDS	PCS. to LB.	PIECES	PRICE	AMOUNT	ORDER	TOTALS
STOPPED		ARTICLE					
DEPT. / HOURS		PART		OPERATION			
STARTED	POUNDS	PCS. to LB.	PIECES	PRICE	AMOUNT	ORDER	
STOPPED		ARTICLE					
DEPT. / HOURS		PART		OPERATION			
STARTED	POUNDS	PCS. to LB.	PIECES	PRICE	AMOUNT	ORDER	
STOPPED		ARTICLE					
DEPT. / HOURS		PART		OPERATION			
STARTED	POUNDS	PCS. to LB.	PIECES	PRICE	AMOUNT	ORDER	
STOPPED		ARTICLE					
DEPT. / HOURS		PART		OPERATION			
		DAY RATE				HOURS	AMOUNT
				TOTAL EARNINGS			
				ALLOWANCE S—			
				TOTAL WAGES			

Form 6. Daily Time Ticket

PLANT ORDER FOLLOW-UP RECORD		
P. ORDER NO.	SUBJECT	DATE ISSUED

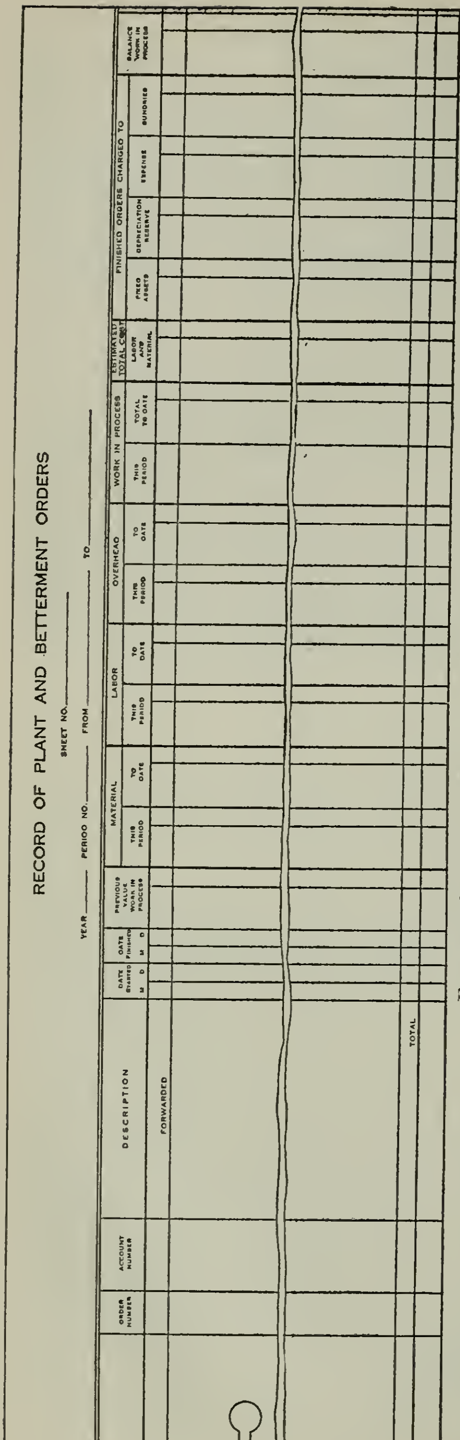
COPIES SENT TO	FOLLOW-UP DATES	COPIES SENT TO	FOLLOW-UP DATES
ORDER CLOSED		COST DEP'T NOTIFIED	

Form 7. Plant Order Follow-up Record

COST CARD			
ACCOUNT NO.	ACCOUNT NAME	CARD NO.	ORDER NO.
DESCRIPTION OF WORK			
DATE ISSUED	DATE COMPLETED	REMARKS	

ESTIMATED COST						ACTUAL COST					
DEPT.	LABOR	O.H. Rate	OVERHEAD	MATERIAL	TOTAL COST	WK. END	DEPT.	LABOR	OVERHEAD	MATERIAL	TOTAL COST
TOTAL						TOTAL OR FORW'D					

Form 8. Cost Card


RECORD OF PLANT AND BETTERMENT ORDERS

SHEET NO._____

YEAR_____ PERIOD NO._____ FROM_____ TO_____

ORDER NUMBER	ACCOUNT NUMBER	DESCRIPTION	DATE STARTED		DATE FINISHED		PREVIOUS VALUE WORK IN PROCESS	MATERIAL		LABOR		OVERHEAD		WORK IN PROCESS		ESTIMATED TOTAL COST	FINISHED ORDERS CHARGED TO				BALANCE WORK IN PROCESS
			M	D	M	D		THIS PERIOD	TO DATE	THIS PERIOD	TO DATE	THIS PERIOD	TO DATE	THIS PERIOD	TOTAL TO DATE	LABOR AND MATERIAL	FIXED ASSETS	DEPRECIATION RESERVE	EXPENSE	SUNDRIES	
		FORWARDED																			
		TOTAL																			

Form 9. Record of Plant and Betterment Orders

its part of the work, a check mark is made on the card opposite the department concerned, by which the cost section, which has access to these files, is informed that no further charges will be received from the department checked. When *all* the departments listed report completion, the cost section is authorized to close out the order. (Cost Card, Form 8).

The cost card, like the follow-up card, is prepared by the order section as to its heading and the columns for "Estimated Cost" before the plant order is sent out, and is forwarded to the cost section, whose function it is, of course, to record on it all the charges made against it. An additional card is prepared, furthermore, for each "dash" number.

The entries for this card are made from the Powers Tabulated Reports of Labor and Material, received from the factory accounting department, which are based upon the charges contained in the requisition-delivery tickets and daily time tickets pertaining to plant orders.

The cost section refers to the plant order follow-up card files and, when notified of *all* work being completed on the order, closes out the costs and places the card in a "closed" file. (See Record of Plant and Betterment Orders, Form 9).

This is a report which is prepared by the cost section, at the close of each accounting period of the company, based upon the cost cards, showing, by the expenditures made on account of plant orders, the company's new investment in the plant during the period concerned, as well as the repair and maintenance expenses and the charges made against Depreciation Reserve. It lists the status of all plant orders still open as well as those closed during the period concerned.

Upon completion, the report is for-

warded direct to the general accounting department for compilation in the general financial report of the company. The plant register department, however, has access to this report just prior to its dispatch, in order that it may take off for record the figures pertaining to fixed asset accounts, as shown by the closed orders.

It has been seen how reference to specific plant orders may be readily made through the files of the plant order follow-up records, which are filed numerically. In order, however, that the best and necessary service may be secured by ready access to specific plant orders from every probable angle, it is necessary that they be cross-indexed in as many ways as possible, that is, indexed according to the building or location in which the work was done, to the subject matter of the work itself, or according to any other related circumstance. This is accomplished by the use of a blank index card (Form 10) in the left column of which is placed the order number and date and in the right column, or body, is written the indexing reference. These cards are filed alphabetically.

Form 10. Index Card to Plant Orders

LAND RECORD		
CARD NO.		ASSET DIV.
NAME OF PROPERTY		FILE ENV. NO.
GRANTOR		
DEED	WHERE RECORDED	
DATE OF DEED	RECORD VOL. NO.	PAGE
BOUNDARIES-LOCATION-CHAIN OF TITLE, ETC.		AREA NO.

Form 11. Asset Account Card—Land Record

CARD NO.	LAND RECORD COMPANION CARD	ASSET DIV.	
PURCHASE ORDER NO.	DATE	PUR. PRICE	
BETTERMENT ORDER NO.	DATE	ASSESSED VALUE	
SOUND VALUATION DETAILS		SOUND VALUE	

TAXES AND ASSESSMENTS				YEARLY NET WORTH		
DATE	RATE	DESCRIPTION	AMOUNT	DATE	DESCRIPTION	AMOUNT

Form 12. Land Record Companion Card

BUILDING RECORD

PERMIT NO.	DATE	ASSET DIV.
OUR BUILDING NO.	LOCATION	
DATE CONSTRUCTED	BET. ORDER NO.	PUR. ORDER NO.
CONTRACTOR		CONTRACT FILE
DESCRIPTION		
SUPERSTRUCTURE		
ROOF DETAILS		FOUNDATION
ELEVATOR DETAILS		

LENGTH	WIDTH	HEIGHT	FLOOR HEIGHT	CLEAR-ANCE	BAYS	ROWS COLUMNS	FLOOR LOAD	NO. OF EL'V'T'RS	CAPACITY EL'V'T'RS	PLATF'M SIZE	OPENING SIZE	HEIGHT CAR

AREA B'S'MT		USE	D'PT.	F
" 1ST FLOOR				
" 2ND "				
" 3RD "				
" 4TH "				
" 5TH "				
TOTAL				

Form 13. Building Record Card

INSIDE EQUIPMENT

SUBJECT		ASSET DIV.
BLDG.	FLOOR	DEPT.
REMARKS		
REPRODUCTIVE VALUE		SOUND VALUE
RATE OF DEPRECIATION		DATE INSTALLED
ORIGINAL COST		DWG. NO.
INSTALLED BY		ORDER NO.

BETTERMENTS

DATE	ORDER	DESCRIPTION	AMOUNT	
		AMT. TRANSFERRED		

Form 14. Inside Equipment Card

The plant register division of the department is organized to be the custodian of, and to maintain up to date, the records which go to make up the accounts of the fixed assets of the company. It is charged with the responsibility of so recording the data and values for all equipment and other physical property that a current and accurate inventory, as well as a detailed history, of such assets is maintained.

The asset account cards are designed to receive the full data concerning each class of assets, a separate card being used for each individual item of property. The following cards are now being employed for this purpose:

Land record	Form	11
Land record companion card	"	12
Building record	"	13
Inside equipment	"	14
Outside "	"	15
Equipment record	"	16
Electric machinery	"	17

It is the intention to make duplicate copies of all present cards and to prepare future cards in duplicate, so that the original can be filed with its proper asset account and the duplicate filed against the department of the plant having physical custody of the property. This is necessary in order that departments may be established (from an accounting viewpoint) as complete entities, with their overheads and other financial responsibilities correctly determined and distributed.

OUTSIDE EQUIPMENT

SUBJECT — ASSET DIV.

LOCATION

DETAILED DESCRIPTION

REPRODUCTIVE VALUE — SOUND VALUE

ORIGINAL INSTALLATION COST — RATE OF DEP.

DATE OF INSTALLATION — PUR. ORDER NO.

INSTALLED BY — BET. ORDER NO.

BETTERMENTS

DATE	ORDER	DESCRIPTION	AMOUNT	
		AMT. TRANSFERRED		

Form 15. Outside Equipment Card

EQUIPMENT RECORD

DWG. OR CAT. NO. — ASSET DIV.

DESCRIPTION — BET. ORDER NO.

PLANT NO.

PURCHASED FROM — PUR. ORDER NO.

MADE BY — MAKERS NO.

STANDARD EQUIPMENT

GENERAL DESCRIPTION

LOCATION			BET. ORDER	DATE INSTAL'D	LOCATION			BET. ORDER	DATE INSTAL'D	LOCATION			BET. ORDER	DATE INSTAL'D
BLDG.	FL'R	DEPT.			BLDG.	FL'R	DEPT.			BLDG.	FL'R	DEPT.		

Form 16. Equipment Record Card

DWG. OR CAT. NO.	ELECTRIC MACHINERY	ASSET DIV.
NAME		BET. ORDER NO.
		PLANT NO.
PURCHASED FROM		PUR. ORDER NO.
DATE OF PURCHASE		SERIAL NO.
HORSE POWER	SPECIFICATIONS	
REV. PER MIN.	VOLTAGE	AMPERES
FORM	MAKE	TYPE
	DATE REC'D	LOAD
GENERAL DESCRIPTION		

LOCATION			DESCRIPTION	BET. ORDER	DATE IN-STAL'D	LOCATION			DESCRIPTION	BET. ORDER	DATE IN-STAL'D
BLDG.	FLOOR	DEPT.				BLDG.	FLOOR	DEPT.			

Form 17. Electric Machinery Card

	NUMBER	WHEN REC'D	PLANT OR.	DESCRIPTION	BOUGHT FROM	COST	LOCATION Bldg. Floor	

Form 18. Shop Number Record

Although not yet following this course, the plant register division should, in recording information, exercise care not only to enter a full description or specifications of the property, with location, price, etc., but should see that the following audit requirements are satisfied:

1. Actual purchase price, or cost of manufacture, with statement as to which is quoted. In the case of old equipment for which no actual cost figures are available, an "estimated" cost should be secured from a recognizedly competent source.

2. Date of installation (in the case of equipment or machinery of any kind) or date of purchase or construction (in the case of land or buildings) noting whether actual or approximate. This is important in the determination of the proper depreciation charge to be made.

3. Actual cost of installation, or similar work, or, where impracticable of ascertainment, an "appraised" figure (a present replacement cost to include labor, material, and overhead) for the work is used, with statement as to which is quoted.

DEPT. OF SUPPLY INVOICE CLERK	RECEIVING OFFICE		ORDER NO.	
1 RECEIVED FROM ______			DATE ______ 19__	
DEL'D BY	SHEET NO.	PRO. NO.	WATERBURY CHARGE	RATE
REQ'N NO.	CAR NO.	INT'L.	WATERBURY WAR TAX	UNIT PRICE

FOR ______

DELIVERED TO ______ RECEIVED BY ______

Form 19. Receiving Slip

EQUIPMENT RECORD MACHINERY INDEX

DESCRIPTION OF MACHINE ______

MAKER ______

MACHINE NUMBERS	MACHINE NUMBERS	MACHINE NUMBERS	MACHINE NUMBERS	MACHINE NUMBERS

Form 20. Equipment Record Machinery Index

4. To authenticate *every* entry of the above characteristics a clear reference must be made to the source of, or authority for the figure, and this must be some form of *permanent record.*

5. Every entry should be checked and initialed, with date, by a responsible person of the register division.

By these methods, fixed asset accounts of a reasonably accurate nature and built upon sound and authentic foundations will be maintained.

A separate binder containing these sheets is kept for each equipment and machinery asset account, so that a

BUILDING REGISTER

DATE ______

LENGTH ______

BLDG. NO. ______ FLOOR ______ WIDTH ______ AREA-INSIDE ______ AREA-OUTSIDE ______

USE	AREA	FOREMAN	CODE	DEPT.

TOTAL AREA TOTAL GEN. PLANT

Form 21. Building Register

FIXED ASSETS AND DEPRECIATION RECORD

DEPARTMENTAL RECAPITULATION

YEAR 19___

DEPT CODE________ DEPT________ DIVISION________

	CODE	ACCOUNT	PERIOD NO	FROM	TO	19	PERIOD NO	FROM	TO	19	PERIOD	FROM	TO	19
			VALUATION 19	DEPRECIATION	ADDITIONS	DEDUCTIONS	VALUATION 19	DEPRECIATION	ADDITIONS	DEDUCTIONS	VALUATION 19	DEPRECIATION	ADDITIONS	DEDUCTIONS
	6600	Land—Factory												
	6601	Land—Outside												
	6602	Land—Reservoirs												
	6603	Land Improvements—Factory												
	6604	Land Improvements—Outside												
	6605	Land Improvements—Reservoirs												
	6606	Buildings—Fireproof												
	6607	Buildings—Mill Construction												
	6608	Buildings—Corrugated Iron and Steel												
	6609	Buildings—Wooden												
	6610	Buildings—Structures												
	6611	Buildings—Houses												
	6612	Inside Equipment												
	6613	Outside Equipment												
	6614	Power Equipment												
	6615	Motors												
	6616	Machine Tools												
	6617	Fabricating Machinery												
	6618	Fabricating Machinery—Special												
	6619	Fabricating Equipment												
	6620	Hoisting and Conveying Machinery												
	6621	Hydraulic Machinery												
	6622	Semi-durable Tools and Instruments												
	6623	Shop Fixtures and Fittings												
	6624	Office Furniture and Equipment												
	6625	Transmission Equipment												
	6626	Belting												
	6627	Construction Machinery												
	6628	Transportation Equipment												
	6629	Patents												
	6630	Button Attaching Machines												
	6631	Y M C A Investment												
	6632	Second-Hand Stores												
	6633													
	6634													
	6635													
	6636													
	6637													
		TOTAL												

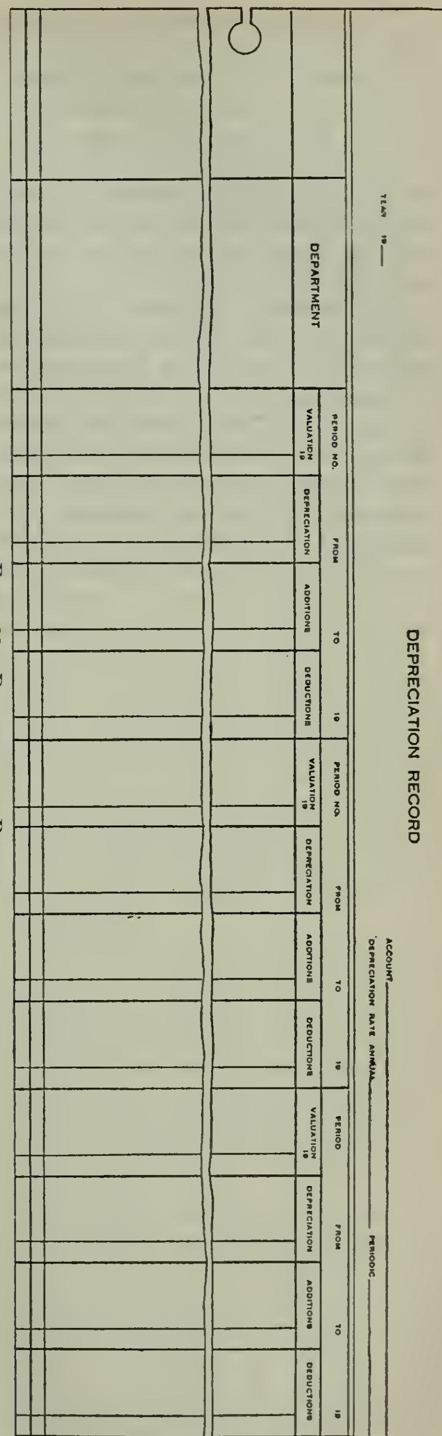
Form 22. Fixed Assets and Registration Record

separate series of shop numbers (Form 18) is provided for each classification. This is done to facilitate identification and for the provision of readier access to the information (description and location) covering a machine of a certain class. It further forms, with the Equipment Record Machinery Index, a cross-index record of the equipment of the same type and classification.

When a plant order is received by the register division which involves the purchase or manufacture of a new machine or item of equipment, it is at once assigned a shop number by being entered in the appropriate binder opposite the next consecutive number, the columns "Plant Order," "Description," and "Bought From," being filled in. At the same time, the proper asset account card is prepared and held in a "pending" file until the item of equipment is received or completed.

As soon as the equipment and the invoice covering it are received, or the cost of manufacture known, the date and price are entered in the shop number record sheet and on the asset card, which should then be placed in an "open" file (in fact a record of part of the real assets of the plant) until the work of installation is complete and the plant order closed, when it should be filed with its proper accounts.

Knowledge of the receipt of equipment is gained by the plant register division through the factory copy of the Receiving Slip (Form 19) forwarded from the receiving clerk, also from personal liaison with the latter's office. The receiving slip bears reference to the proper plant order, since the purchase order and vendor's invoice and packing slip show such number, thereby providing rapid determination of the shop number by which the item of equipment is always to be identified. A metal shop number disk is at once fastened to the machine.



Form 23. Depreciation Record

The Equipment Record Machinery Index Card Form 20) is designed to summarize or list, for ready reference, the shop numbers of all machines or items of equipment of the same specification and made by the same company. It simplifies reference to several cards in the asset account files and forms, with the Shop Number Record, a cross-index record of all equipment.

The Building Register (Form 21) supplements the Building Record by recording in detail the dimensions of the floors of each building together with the use to which such areas are put and the name of the department and foreman charged with its occupancy. By preparing this card in duplicate, it is possible to compile more complete records of departmental responsibilities.

The Fixed Assets and Depreciation Record (Form 22) is a report designed to summarize for the comptroller the values or investments carried by the company as distributed throughout the several fixed asset accounts. Although not yet in use, it will be submitted periodically for the purpose of determining and writing off the proper amounts of depreciation. It also shows lump sum additions or reductions in the several accounts made during the previous period because of new investments or the disposal of property.

The Depreciation Record (Form 23) is designed to report to the comptroller the departmental distribution of the values carried in the fixed asset accounts, as reported in sum in the Fixed Assets and Depreciation Record.

PROBLEMS OF BUSINESS ORGANIZATION

BY HENRY S. DENNISON*

THE need of increased efficiency in selling is going to hold a central place on the stage of business interest for many years to come, for two reasons. First, we have seen the last days of the seller's market and are entering upon a period of competition probably more keen and intelligent than any we have ever known in this country. Second, while there is still plenty of progress to be made in reducing costs in the factory, there is a still greater opportunity in most businesses for reducing costs in selling.

The business executive who begins an intensive study of his sales organization today may be preparing himself to meet a very severe test; and even if the trend of the market becomes less strenuous than is now indicated, he certainly cannot lose by such a study.

In writing an article on sales methods, it is not pretended that one company's experience has any exclusive value. The early stages of all education, however, consist in an exchange of experiences and opinions, until there can be developed experts who are able to teach. In early stages, the best anyone can offer for the constant advance of American business methods is his own story, for what it may be worth.

Almost as soon as our company reached the conclusion that salesmen were not simply born but were also made, and determined to have a share in their making, we found that the officers knew altogether too little about just what the job was that they were expecting their salesmen to perform At their first real attempt, in 1906, to define the details of the salesmen's jobs, a wide variety of practice was found with regard to terms, prices, standards of quality, and promises of delivery, and a correspondingly luxuriant crop of misunderstandings between the factory executives and members of the selling force. Stock goods were priced in the catalogue, and might have been assumed, therefore, to have been uniform all over the country; but there was too little uniformity in the application of the discounts for jobbers and retailers. A few very irregular special discounts were invented. Then it was easy to make a slight change in stock goods, enough to call them special, and urge upon the factory the need of "leaving off all overhead charges from this particular order."

The standards of quality underwent similar deterioration through sales of job lots which developed into periodic transactions.

As to promises of delivery, for years there was no approach to an understanding of conditions. The variety in the policies of our various salesmen was only equaled by the raggedness of the factory's fulfilment of promises of deliveries under a system which at one time labeled 65 per cent of our special orders "rush."

Under these conditions, to undertake officially any improvements of selling methods meant first to bring into some degree of uniformity the standards of quality, prices, and the possible conditions of delivery of goods. In other words, in order to approach the selling problem, we had

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first to make a beginning on the merchandising problem and find out as nearly as possible the conditions of the market and the possibilities of the manufacturing equipment, and so to fix upon the type of merchandise and the conditions and terms of its sale that combined the greatest economy and efficiency of manufacture with the closest meeting of the demands of the market.

The job of merchandising is essentially the co-ordination of the manufacturing department with the selling department. To effect this in the best and quickest way the merchandise was divided into five principal lines, and an advisory committee, consisting of sales managers and factory men, was appointed for each.

II

A real committee is something more than the sum of its members. It is capable of producing results much better than could be produced by any one of its members, or by the mere adding together of the best ideas of each of its members. But an imitation committee, a mere aggregation of men in a room, has an abounding capacity to waste time.

To make a real committee, take not more than nine and seldom more than seven men, not too saturated with knowledge, choose as chairman one who has some skill in summarizing, a knack of drawing out the best thoughts of other people and a persistency in keeping on the main track; let them stew together over real problems (coming occasionally almost to a boil) for something short of three years, perhaps, and by the grace of God you will then have a group with a personality of its own just as real as the personality of any of its members, and with a capacity for getting results through joint action greatly superior in breadth and ingenuity to the mere aggregated abilities of its members.

In large concerns a true co-ordination of the efforts of its various divisions and officials is an extremely difficult accomplishment, and attempts at such co-ordination too often result in that stiffening and delaying of progress that we call red tape. Their only recourse is a carefully planned and patiently developed committee system, for only in a real committee can breadth of vision, range of imagination, and snappiness in action be combined.

But the true committee is an organism; it must be grown like any other live thing; it can not be laid together like a brick house. The art of working together in committees has a technique all its own. Even after a committee has been carefully chosen, it can grow into a smoothly functioning organ of the business structure only with time and careful guidance. It would be interesting to know how many hundred thousands of committees in the United States have been discarded because they refused to bear fruit the day after they were planted.

I have been running over some of the records of the meetings of our committees in 1906, 1907, and 1908, and have been much amused at the awkward capers they cut in their young days. For one thing, the members had not had any opportunity to learn from each other, and personal hobbies cluttered up their records; later on the factory man looked at things just as keenly from his own point of view, but in addition had learned to appreciate the salesman's point of view. These old records of our company show so many cases, too, where the committee members did not realize that they had not enough information to base action upon, and they would stew

about and seek for some compromise or resort to the usual cheap-and-easy majority vote. But even in these early months the committees had some suggestions to offer to warrant their existence, though the directors with all possible tact had to reject most of their findings. Inside of two or three years there was little doubt that they were paying their way, and today no one pretends that we could go on without them.

Our committees are not themselves executive bodies; they are in all cases advisory to some executive. But when a committee gets working smoothly, the executive, if time allows, practically always wants to advise with its members and to thresh out important matters thoroughly enough to find a ground of accord among them; and he usually accepts their advice. This course has the advantage of keeping the committee members thoroughly posted on the true meanings of various rules and policies of the management and assists materially therefore in putting the rules into intelligent effect.

The work our committees undertake is of many sorts but not of all sorts. In general wherever the right development of plans and policies calls for a full presentation and understanding of the interests of two or more separate administrative units of the business—wherever, in other words, co-ordination is the principle problem—there committees find a place which can be properly filled by no other device of management.

Thus in facing the problem of merchandising, in determining the prices and make-up of our goods back in 1906, we found that the joint needs of the factory and selling department were being met to a more and more satisfactory extent as merchandising committees became better acquainted with their jobs. A few years later a committee on sales methods did yeoman service in discovering the best as well as the worst methods of keeping before the market the goods our merchandising committees had perfected and priced.

III

As our committee on sales methods, whose functions have been described in this article, got more and more into their work, the variety of terms and prices employed by different salesmen in various sections of the country became more and more impressive. No attempt was made in those early days to determine one best policy; hardly a man in the whole group of committee members believed it was possible for one set of prices and conditions to rule from coast to coast. The first natural step in developing a best practice was to eliminate the worst practices. Certain prices were low and a few others high beyond all reason. A fairly early and very natural development, therefore, was a price book for special goods with maximum and minimum prices for each article.

So far were we from unanimity of opinion that in the first year there were at least two and possibly three different price books issued. In 1907 it was voted that the St. Louis price book with a few changes be used for all salesmen. A few more months of experience with a price book and a few more committee meetings and price irregularities were still further limited. Meanwhile, a similarly slow process had been going on in the standardization of our goods and terms by eliminating some of the crudest cases of below-grade, job-lot transactions and the least defensible special discounts.

By discovering the worst practice we were slowly discovering a best or standard practice, and in 1912 we were solidly on a one-price, uniform-discount, standardized-quality basis.

As the merchandizing aspect of our sales policy proceeded, it was, of course, necessary to develop sales methods appropriate to the changed conditions. When the salesman could perform his function by cutting the price to the hard buyer and making it up on the easy customer, he did not feel the need of sales arguments based upon the quality and utility of the goods. But as the one-price policy was approached, the need of a great deal more knowledge than a salesman could pick up on his own account became pressing; so, in 1908, the first salesman's class, about fifteen in number, visited the factory for a week's stay—spent in trips about the plant, at lectures and discussions.

Naturally enough the handling of this first class and a few succeeding classes was pretty raw in spots and of low efficiency, but by the time the fourth group was ready to come (about 1911) such classes were admitted by all to be an essential factor in the equipment of a salesman; so that, after all the older salesmen had had one or more trips, the factory training class settled down into a regular part of a salesman's training, coming usually somewhere between the twelfth and eighteenth months of his service.

The building of a sales policy, therefore, was more or less like the building of the committee system, an organic growth with something too much of the nature of trial and error in it. We can see now many corners that could have been cut and errors which could have been avoided, and how more rapid progress could have been made at less cost; but, after all, the goal of a substantially uniform sales policy was reached and is today kept alive and healthy by constant study on the part of managers and committees and constant improvement and adaptation to changes in conditions.

IV

Very soon after we began a critical study of our sales methods it became apparent that the long-trip salesmen and the manager with the widespread selling territory were the chaps with the most ragged and inconsistent sales habits.

At that time we had divided the country into five territories, with their headquarters in Boston, New York, Philadelphia, Chicago, and St. Louis. Roughly, the Boston office covered New England; the Philadelphia office, Pennsylvania, the Virginias, and Carolinas; New York, besides its own state, covered the water routes, which gave it most of the South and all the Pacific Coast; St. Louis covered the Southwest, and Chicago the Middle West to the Rockies.

Managers in these five cities met together frequently, but the old, deep-rooted feeling that conditions "in my territory are different" prevented any sort of real mutual understanding; hence, as a matter of fact, we had five selling policies. In the early days of relative isolation of West from East and North from South, this situation did not cause much obvious harm, but as travel and communication became more perfect the many inconsistencies in policy demanded correction.

But worse than the inconsistency in policy between one territory and another was the condition of irregularity within each of the territories—especially those of the largest extent. In neither the New York nor the Chicago territory could a sales manager keep in close enough touch with his job to

be master of it. He sent his salesmen out on long trips, which made it necessary to allow them wide discretion; and it was just these long-trip men whose infrequent contact with us made them tend to lean more strongly toward the customer's interest than toward an even balance between the customer's interest and our own. Only the older men and the best of them could handle the long trip effectively, and it was the older men who deserved the chance to settle down and who had earned relief from excessive traveling. As business grew in these larger territories the manager found it next to impossible to get out of his office, and when he did it was possible to do only the most crass, high-spot inspection. Each year, moreover, he was further removed from actual selling experience.

V

It was this situation within the larger territories which started us developing the smaller sales unit which we called the district. At first the districts were managed from the old territorial bases and consisted, therefore, in practice, of placing manager's lieutenants at strategic points in his selling field. These lieutenants or district managers were located in principal cities with enough territory surrounding them so that they could cover it with from three to a dozen men, while the lieutenants would themselves have part of their time for actual selling.

As the district system gradually developed, there have been as many as forty districts in the United States and Canada, although the number during the seller's market of the last few years has been reduced to thirty. The districts followed roughly along state lines, though there might be in one case two districts in a state and in another section two to five states in a district. An important part of the district system is that the unit should be kept flexible, fit to be changed to match most closely with the demands of the market and the demands of personnel.

The district system, with its general sales management scattered among the five original cities, had not gone very far before it was apparent that the manager of any group of districts found that most of his problems required information from the factory for their understanding, and co-operation with the factory or merchandising division for their best solution. One by one, therefore, as convenience served or as new appointments were made, the general sales managers moved to the factory, and while the district system was still in its youth and presenting new problems we still had five general sales managers, just as there had been under the old territorial plan. By retirements and promotions the five became three, and in the full tide of the seller's market of 1918, two men carried on the supervision of all domestic districts. This element of flexibility also has been of importance in adjusting the strength of our selling efforts to the market, and was especially advantageous during the period of transition from the territorial system to the district system.

As general sales managers moved to the factory for their headquarters, it was natural that the accounting departments, previously located separately in each of the five cities, should verge also to the same place. This process of centralizing was recognized as being very difficult to carry out, but, having made up our minds at the beginning that it would pay to use all the time and tact necessary to keep the whole concern running smoothly during these transition peri-

ods, the problem was tackled in a spirit of toleration and patience which conquered all difficulties and brought us to a fully centralized control—and a very real control—of selling methods, with the external and internal good-will accounts increased rather than impaired.

VI

The obvious necessity of constant contact between the merchandising and manufacturing divisions, as indicated in the preceding paragraphs of this article, finally started the move of general sales managers toward our factory as central headquarters. As the district system developed and district managers handled more and more of the simpler selling problems on the spot, the general sales managers' problems became more and more those of co-ordination with some other division of the business or of maintaining policies consistent with those of other branches of the selling division. After they had moved to a central headquarters the value of contact with other divisions and with each other proved even greater than had been anticipated.

The most earnest advocates of centralization found that they had themselves underestimated its values. Questions which the general sales manager in St. Louis had settled out of hand were found to have more satisfactory solutions when men in the manufacturing division could be made to understand them. The old habit of exhortation gave way to the habit of discussion and consultation, and post-mortems gave way to preventive medicine. Sales managers gained by being in close touch with merchandise managers' plans, with advertising schemes and manufacturing needs; and they gave as much as they got in all of these contacts.

But they got from each other perhaps even more than they got from heads of other divisions of the business. It was only when most of the general sales managers had settled down in one central office that we began to get a real insight into the sales practices in vogue and into the relative merits and necessities of such practices. The general sales managers were formed into a selling committee and by informal conferences threshed out the best and the worst and slowly developed a standard practice for salesmen to live up to. They developed also sufficient and simple report forms and other methods of inspection which would tend to show how nearly our sales force was living up to its standards.

By keeping themselves in close communication with their district managers, general sales managers were able to keep their rules and standards within the practical bounds of enforceability and to get the intelligent co-operation of their district managers toward their enforcement. By these means that most difficult question of how to preserve the balance between too much control and too little was handled in a most practical way.

Where a business house wants resource and initiative in its salesmen and at the same time demands something better than chaos in its selling practices the old problem of preserving freedom while abolishing license begins. We found no golden rule to tell us how to maintain central control while allowing decentralized freedom of execution, but we found that spending plenty of time in discussions and consultations before rules were made usually paid rich dividends. And we found that the more thoroughly our sales managers became acquainted with the actual job of selling, the more ground our rules and standards could

cover without encroaching in the least upon the broad field of the creative effort of salesmen.

District managers scattered widely over the country in some thirty to forty cities must neither be shackled by rules nor allowed to develop inconsistent sales practices. Similarly under each of these district managers their salesmen must have rules which guide but do not bind. To this end standard practices are established after thorough investigation and patient explanation and definite and appropriate limits of deviation are allowed to each district manager, within which he may move at his discretion, but to go beyond which he must have a general sales manager's approval.

Under this form and spirit of sales management the district offices become extremely valuable training grounds for the higher positions of the merchandising and selling departments, and the abilities shown by the district managers in handling the various angles of their work guide us largely in choosing the men to fill them.

VII

Upon the centralization of all general sales managers at one point—and that a small town in New England—it was perfectly obvious that ample provision would have to be made to prevent their getting out of touch with their territories. Their traveling schedules were therefore planned to occupy not far from ⅓ of the year, and pretty soon these men found special value in trips which covered not only the larger cities in which district offices were located, but touched the routes of junior salesmen as well.

Inside of a year we realized that it had been all too easy for the manager of the Philadelphia territory of the old days to believe that he was in touch with his whole territory when he was more truly absorbed in the details of his home city trade. With plenty of phone calls at home, he traveled annually and superficially and even at home found it difficult to hold the broader general manager point of view as contrasted with that of a city manager.

Fears that these sales managers might become unduly lenient to the manufacturing department's interests or shortcomings faded out of mind and were forgotten before they had time to blossom. Such a bias is a rare growth in a mind with a real selling bent. What little chance there ever was of twisting or narrowing a sales manager's mind, however, was canceled by the other traveling schedules which sent our manufacturing division heads out for trips to the district offices. This widening of the factory man's vision, incidentally, became a most effective influence toward well co-ordinated effort.

Within each sales district, it will be remembered, the goal aimed for was to make possible a working management; the standard for a district manager's job allowed time for him to do some selling every week and some little traveling about with his salesmen every few weeks. Thus, traveling in varying extent was built right into the sales organization itself and seems to us now to have much the same continuous refreshing and renewing function in our business system as does the circulation of the blood in one's body.

One peculiar detail of our system of sales management deserves a slight digression at this point. It has already been stated that among the deficiencies of the original territorial system were the forces which worked toward hands-off sectionalism in each manager's frame of mind. We were, as a matter of fact, about fed up on the

special and peculiar "impossibilities" in one section and another. So after the district system was well established and most of the general sales managers had moved to central headquarters the districts were redistributed among them in such a way that sectional lines were completely wiped out and each manager had as nearly as possible a fair sample of the whole United States.

Not only did this arrangement enable each general sales manager to have a large city, a northeastern, central, southern, and western district to supervise, but it gave us the points of view and experience of more than one man in facing the special problems of any section. An immediate and striking effect was that these problems became very much less special than we used to think them. This hop-scotch plan has been steadily in effect whether our general sales managers have been five, four, three, or two in number and has done a world of good in allowing us an impersonal comparison of salesmen's practices.

The plan looked at first sight to be extravagant in time and travel expense, and compared with the old territorial plan it, of course, did cost more. But, once granting that the home of general sales management should be at some central headquarters, the difference in cost between distributing districts among managers in solid blocks or in skip-stop samples was too small to be figured.

We found anyhow that the cost of managerial traveling bulked larger in our imagination than it did in our ledgers. With well-planned trips, moreover, where our greatest selling strength could be sent out to meet our knottiest problems, there were direct returns of no inconsiderable size to be added to the indirect values of close supervision and constant education.

VIII

The relation of each general sales manager to the district managers under his jurisdiction is the usual supervisory relation. The district manager controls the daily work of his men and his office, gaining from frequent correspondence and occasional consultations the advice of his general sales manager. The latter must specifically approve all hiring, firing, and salary changes, or himself arrange transfers.

His opportunity to follow the methods of several district managers enables him continually to establish standards of good practice, which the district managers are expected to follow within definite limits of flexibility. Exceptions falling without these limits the general sales manager must approve in advance.

For the training of salesmen, for example, we have a schedule developed from the experience of several district managers. As this schedule gets more acceptably fitted to its purpose we are discovering an interesting need of writing textbooks of our own and have already been obliged to call for expert advice that they may be as effective as modern experience knows how to make them. The wide variability in the mental capacities of new men, however, forces us to allow for a considerable fluctuation from schedule; but if a district manager wants to conduct the training of a new man beyond definite points above and below normal he must get his general sales manager's approval. For special rush orders, also, the district manager has a monthly quota appropriate to the business of his district; to exceed this quota (human district managers never fall short of it) he needs his general sales manager's signature. The routing of salesmen, the control of

district expense, and the handling of claims and allowances come in the same way under the jurisdiction of the general sales manager to be carried out through and with his district managers.

IX

Meanwhile our merchandise managers, who, as chairmen of the five different merchandise committees, take the responsibility for the make-up and pricing of our goods—for their utmost possible fitness both to market demands and factory facilities—must, of course, travel freely and keep first-hand contact with customers and salesmen. They learn much from and have much to teach to the selling division. On each trip, therefore, they take pains to give to district managers and salesmen the most advanced selling points for their own goods, and even at times themselves undertake unusually difficult transactions with customers. After their return they make a report of information and suggestion to each general sales manager upon any points falling within his scope of duty.

This orderly course of getting from several points of view information concerning the progress of our sales methods and policies has been of the utmost value. It has, of course, its opportunities for irritations, but, chiefly because of our complete centralization and the daily chances for friendly contact or early conciliation it affords, no conflicts have materialized.

Out of the ceaseless effort to find better sales practice which a freely traveling sales management induces and from the opportunities for comparison of results and exchange of ideas which a high degree of centralization affords, is growing an approach to the sales problem bearing about the same relation to line management which the engineering and the planning departments of the factory bear to production management.

There is in development a function of sales engineering or sales planning more intensive than the usual market analysis, which promises an increase in effectiveness in selling function greater than has been gained in the progress of the last ten years. As with the application of planning to factory production, the indications of our first time-studies are that the greatest gains are to be made not in a salesman's efficiency during his productive hours, but in the utilization and partial elimination of his non-productive time by ingenious and minutely instructed planning and routing.

We may expect in this field, as in the field of production, to hear a prompt chorus of allegations of mechanizing—of attempts to turn men into machines. Here, as in the factory, the answer must be that any elimination of the need of true initiative will be the result not of planning, but of bungling. Good planning will force wasted hours to make room for twice as much initiative per day as can now be brought into play.

X

So far as is known this idea of making specific application of the principles of Frederick W. Taylor to the selling department had its birth (most appropriately) at a meeting of the Taylor Society not many months ago. Our own experience in the field is therefore small, but will be supplemented soon by the work of a number of concerns co-operating through the society to this end.

All such plans as have been described so far have to do, of course, with a well established market. When one goes

pioneering into a selling field the situation is quite different, but different in degree rather than in kind. In an established market we have learned the details of selling conditions and know enough to make rules from which a relatively small deviation is sufficient to allow to the local representative. In an entirely strange market we simply do not know such conditions and the rules must be laid down in a much more tentative way, leaving more latitude to the local agent.

In such cases we take great pains that the representative is thoroughly acquainted with our general policies and the reasons therefor, so that he may build strongly in the direction of a sound uniform policy. A standard practice is established as fast as possible for these new fields, and if that practice cannot conform exactly to our established home practices at first, we are constantly attempting sanely to bring it into such conformity. Pioneers, therefore, must be chosen from those solidly grounded in our work.

This principle has made our entry into the export field a difficult and prayerful job, but in so far as we have lived strictly up to it, it has saved us very many of those painful and costly experiences which some American business men in the foreign field have had.

It is apparent that the further away a sales representative is from the home office, the more difficult becomes the mechanical means of avoiding misunderstanding and the more expensive are errors, so that a man's knowledge of the line and the actual terms and conditions upon which it is practicable to sell it must be pretty thorough before he is sent thousands of miles away from home. The temptation to send away a man who knows Spanish, but who may not know our line is always great, but it is one to be firmly resisted. And if the man must know the line, it is equally true that he must know the general policies that dictate the pricing scheme, the quantity and trade discounts, delivery times, and all the rest. However far away a foreign field may seem to be, it is not long before exceptions made in that field come home and roost upon some excellent domestic customer.

Since it is so difficult as to be almost impossible to start in a foreign field with a sales policy uniform in every respect with the domestic policy, it is all the more necessary that a man who is incidentally acquainted with the whys and wherefores of the domestic policy and who is sympathetic with them should be the man to send to the far-away points.

HANDLING THE LUNCH PROBLEM

BY CHARLES FREDERICK CARTER*

WHILE some progressive employers were furnishing lunches for office and factory workers prior to 1914 the exigencies of war conditions compelled a sudden and very great increase in the practice. Today it is the rule, rather than the exception, to find well-equipped and well-conducted lunchrooms for employees in department stores, large offices, and factories; for experience has demonstrated that as a means of saving time, promoting efficiency, cultivating esprit de corps, and reducing the labor turnover nothing else compares with a good lunchroom. The contrast between the output of the employee who munches cold sandwiches and pickles at his work-bench or else rushes out to the quick and dirty restaurants to be found in factory neighborhoods to gobble an indigestible mess, and another employee no more capable who sits serenely down amid attractive surroundings to an appetizing, wholesome, well-balanced hot meal is too great to escape attention.

As a result lunchroom practice while becoming thoroughly established has crystallized along pretty clearly defined lines, variations being due to the classes of employees affected. To begin with, the cafeteria system is now practically universal except for officers' dining-rooms. A few big metropolitan banks still retain waiters for the clerks' dining-room. One enormous Chicago concern originally established to equip saloons and to develop hotel equipment as a side line, now finds its principal occupation in constructing employees' lunchrooms. One part of its business consists in turning out ready-made cafeteria outfits ranging in size from a capacity of 100 lunches an hour at a price of $1,495 for a complete unit to a capacity of 500 meals an hour at a price of $8,865. Outfits of greater capacity are designed and built to order. The very last word in a scientifically conducted lunchroom is the one which furnishes the midday meal for the nearly six thousand employees of the Metropolitan Life Insurance Company at its headquarters in New York. For several years all hands from the president down to the fireman in the basement, have been eating lunch every business day except Saturday at the expense of the company.

The decision to establish the lunchroom and to furnish meals free was reached after careful investigation. It is quite an undertaking to get an office force of, say 4,500, from their desks, into their wraps, down the elevator, back again, out of their wraps and back to their desks. If the average time lost per person was only one minute the total would be 75 hours, or 9⅜ days. Again, of every 100 girls who went out to lunch on a stormy day an average of 6 were sure to catch cold and stay at home for a day or more. Now the business of a great insurance company cannot very well be put over while young ladies nurse bad colds.

Young girls left to their own devices are prone to lunch on a cream puff and a bag of chocolates. Such dietetic lapses are bad enough when occasional; becoming too frequent they result in a very definite loss of efficiency. Male

* Special Investigator for *Administration*.

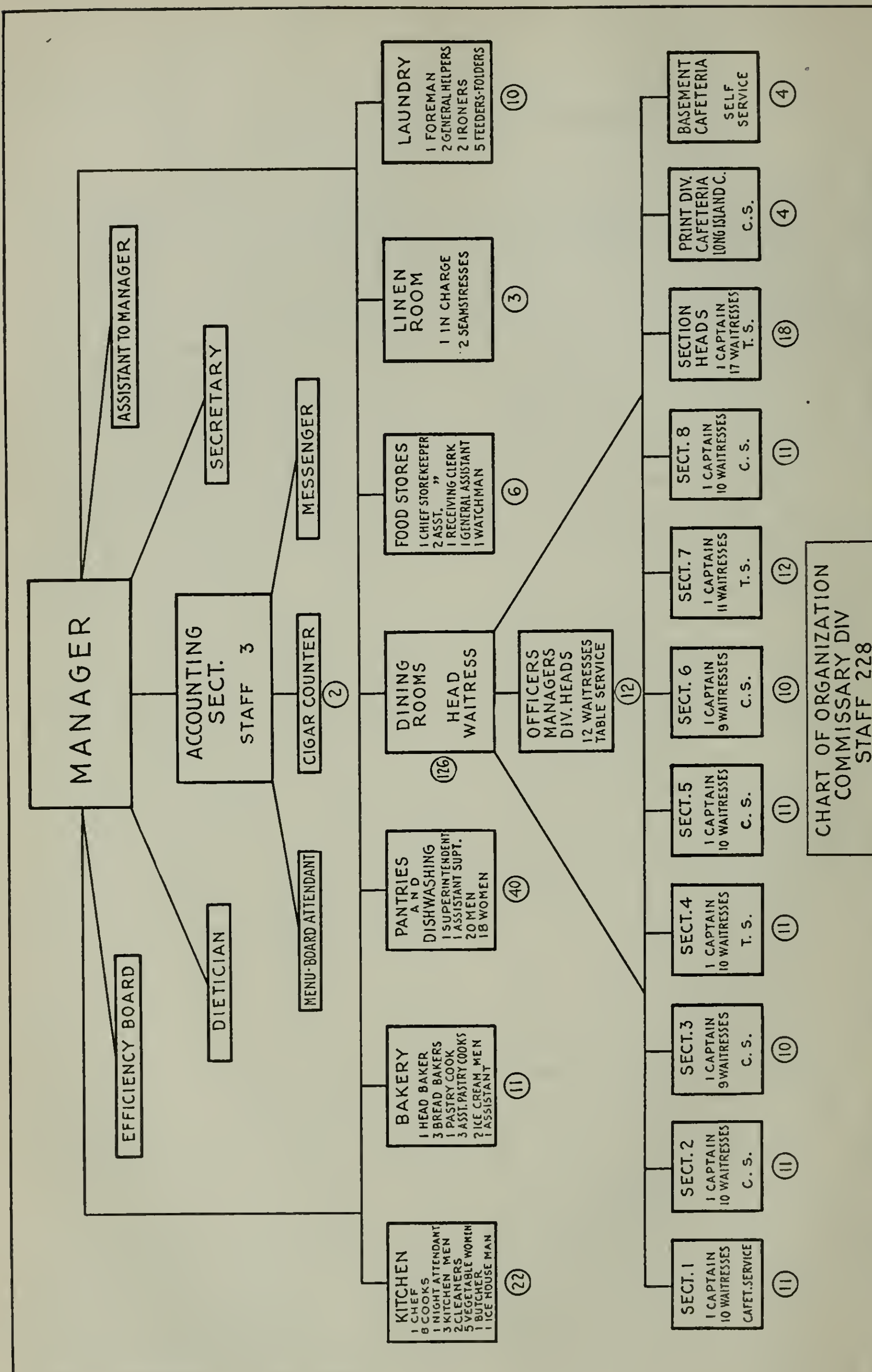


Figure 1. Chart Showing Organization of the Commissary Staff of the Metropolitan Life Insurance Company

clerks are equally incapable of choosing sensible lunches. For these and other reasons the company employed a dietitian to plan daily lunches which would always provide a balanced ration, yet be sufficiently diversified to avoid palling on the appetite. An experienced restaurateur was employed to conduct the business management.

II

For some years waste was avoided by providing the menu for the following day and requiring each person to order his next luncheon before leaving the lunchroom. A complete record has been kept of every item of food served from the day the lunchroom was first opened to date, a period of 11 years. This mass of statistics is in shape for ready reference and it furnishes an invaluable guide for service. Employees are no longer required to order their lunches a day ahead, yet each day's meal is so accurately planned that while everyone has enough, no food whatever is wasted —not even so much as a wedge of pie. Considering that more than 5,800 lunches are served daily, this is no mean feat. For example, Metropolitan statistics show that of 1,000 men 350 will take coffee in summer, 50 will take tea, 200 will take iced tea and 400 will drink milk. Of the same number of women 300 will take coffee, 35 tea, 365 iced tea and 300 milk. The proportions of the different beverages for both sexes vary with the seasons; but the statistics are always at hand as an infallible guide, not only for beverages but for each dish served in the course of the year. Lunches as well as life insurance have been reduced to an actuarial basis.

A complete table d'hôte meal is served, except that in summer soup is provided only occasionally. A certain proportion will not eat the regular meal, but will limit themselves to crackers and milk and dessert. The only dish of which this army of office workers never seems to tire is ice-cream, which is always on the bill with another dessert as an alternative choice. A sample menu is here given.

Bread and Butter Crackers and Milk
Braised Short Ribs of Beef
Boiled Potatoes
Lettuce Salad
Preserve Tarts Ice-cream
Coffee Tea Iced tea Milk

In 1918, 1,237,919 luncheons were served at an average cost of 27.5290 cents per capita per meal; in 1919 1,360,822 meals at a cost of 30.9078 cents; in 1920 1,431,989 meals at an average cost of 36.3972 cents per capita. This included, not merely the cost of the materials, but wages of the entire restaurant staff, rent, heat, fuel for kitchen and bakery, and light, depreciation, and replacement fund for crockery and glassware.

The business of serving luncheons to the Metropolitan's army of employees is conducted with the care its importance deserves. It is entrusted to the commissary division, the head of which has the title of manager. He reports directly to the second vice-president, to whom he submits a quarterly report covering the operations of the commissary division.

Under the command of the manager of the commissary division is a staff of 228 persons, including 1 chef, 7 cooks, 1 butcher, 1 nightman, 2 kitchenmen, 2 cleaners, 3 vegetable women, 1 head baker, 3 bread bakers, 1 pastry cook, 1 assistant pastry cook, 1 ice-cream man, 2 assistant ice-cream men; a pantry staff consisting of 1 superintendent, 1 assistant superintendent, 12 men and 30 women; a head storekeeper, 1 assistant, 1 receiving

NOTICE

Deliveries are accepted daily between 7-11 A.M. and 2-4 P.M., on Saturdays during the forenoon hours only

Invoices must be addressed to "Commissary Div.," bear our order number and accompany goods.

All invoices will be paid within 10 days after receipt of goods and a deduction of 2% Cash Discount made, unless other terms are specified on invoice.

Monthly statements must reach this office before the 5th of next month in order to insure prompt payment.

METROPOLITAN LIFE INSURANCE COMPANY
COMMISSARY DIVISION

18 East 24th Street
12th Floor

New York City,..............................

Order No......6485.........

M..

...., will kindly deliver

to us the articles listed below:

....
Manager.

Figure 2. Order Form Made Out In Duplicate

clerk and 2 general men; a laundry force of 1 foreman, 2 men helpers, 2 ironers and 5 feeders and folders; a linen-room force of 1 head of stock and 2 seamstresses; an auditing and clerical force of 1 bookkeeper-in-charge, 2 senior clerks, 3 junior clerks, and a boy. Prior to the installation of the cafeteria system there was a dining-room staff of a head waitress, 10 captains, 5 executive waitresses, 5 division head waitresses and 153 waitresses. By introducing the cafeteria system for the clerks' dining-rooms this staff has been reduced by 43. The dining-rooms for officers and heads of divisions are still served by waitresses.

III

Buying is done by the manager of the commissary division. This is an important duty, as can readily be imagined, for large quantities are dealt in. Some of the items are meats of all kinds, for the year 1920, 429,843 pounds; fish, 88,430 pounds; sugar, 71,138 pounds; coffee, 16,580 pounds; flour, 1,202 barrels, and other things in proportion.

Orders are made out in duplicate on numbered forms, the original going to the dealer, the copy being retained by the commissary. Goods must be accompanied by invoices bearing the order number. All invoices are paid

within ten days less 2 per cent for cash, unless other terms are specified in the invoice. The goods are accepted by the receiving clerk who checks them by the invoice. The storekeeper does the same. The invoice then goes to the manager of the commissary division who checks the prices. The bookkeeper checks the storekeeper's books by the invoices and the auditor goes over the accounts so that every order is checked five times before it is paid.

An account of food materials is kept in a loose-leaf book. Each item is given a separate leaf, which is ruled on both sides in four vertical divisions. The first is devoted to goods received, spaces being ruled for bill number, date, quantity, price, and amount. The second division is for goods issued to the kitchen and is ruled in the same way, the only difference being that the first column is for requisition number instead of bill number. The third division is for goods issued to the bakery and the fourth for "raw product"; that is, for items, such as milk, which are served uncooked. Thus a glance will show the quantity of each item purchased in a given period, the cost, what disposition was made of it, the cost of the quantity used in each department, and the remainder unissued. The system supplies a perpetual inventory, a guide for buying, and a cost sheet.

Luncheon is served swiftly and without confusion under a carefully devised system. The meal is served in three "periods" of 45 minutes each, the first beginning at 11:45 A.M., the second at 12:30 P.M., the third at 1:15 P.M. Each employee is provided with a numbered and lettered ticket which must bear his signature, good for one calendar month. Tickets for "A" period are green; for "B" period pink, and for the last period yellow.

RECEIVED					KITCHEN					BAKERY					RAW PRODUCE				
Bill	Date	Quantity	Price	Amount	Req.	Date	Quantity	Price	Amount	Req.	Date	Quantity	Price	Amount	Req.	Date	Quantity	Price	Amount

FIGURE 3. FORM SHOWING DISPOSITION OF GOODS RECEIVED BY THE METROPOLITAN LIFE INSURANCE COMPANY

Metropolitan Life Insurance Co.
Commissary Division

This Lunch Ticket is ... personal use of the one whose signa... affixed below during the month of

June, 1921
Read regulations o... everse side.

2

Signature ....

TICKET 376

PERIOD A

REGULATIONS.

Luncheon will be served to holder upon presentation of this ticket at Unit and Period indicated hereon.

Clerks failing to bring their tickets may apply to checker for an Emergency Ticket, subject to a charge of 5 cents.

Duplicate Tickets to replace lost tickets will be issued at Ticket Desk at a charge of 15 cents each.

Tickets must be renewed on last serving day of each month or, if absent, on the first day present.

Figure 4. Front and Back of Admission Ticket

There are eight cafeteria counters each of which is capable of serving 250 persons in 14 minutes, or an average of 18 per minute. This is the maximum that can be served at one counter and allow the diners time to eat and leave in time for the tables to be cleared for the next period. So each ticket bears on its face a large, black number. Ticket holders will be served only in the period indicated by their ticket and only at the counter corresponding to the number on their tickets. Careless persons who lose their tickets must pay 15 cents for another, not that the company wants the money but as a penalty for carelessness. Absent-minded employees who leave their tickets downstairs have not time to return for them, so they may purchase an emergency ticket good for a single meal for 5 cents.

IV

When the lunchrooms were first established the tickets bore coupon numbers, one of which was punched by the doorkeeper as the diners filed in; but this was found to take up too much time and to serve no useful purpose. Now the diners merely exhibit their ticket to the doorkeeper as they enter the room to show that they are arriving at the right period and are going to their proper counter.

Upon finishing the meal the trays and dishes are left on the tables to be collected by bus women, placed on large trucks, and wheeled to the dishwashers.

Daily pantry reports are kept on loose leaves ruled in 11 vertical divisions. The first is for the various items on the day's menu. Then follows a division for each pantry from No. 1 to No. 8, ruled to give a space for the number of portions of each item served in each of the three periods and the total number of portions of each item served during the day. Another column gives the total of portions for all pantries of each item for the clerks' dining-rooms. Other columns give the total of each item of food for the officers' dining-room, division heads' dining-room, section heads' dining-room, basement lunchroom, annex lunchroom, commissary employees, and the grand total of each item served during the day. Filed away in a binder these statistics become the guide for the preparation of future meals without waste.

V

Second in size in New York City of employees' lunchrooms is that in which the 3,000 employees of the Guaranty Trust Company's main office are served upwards of 80,000 meals a month. This includes an average of 7,000 suppers and 1,000 breakfasts for night workers. The company spends half a million dollars a year for food alone furnished free of cost to its employees. More than 18,000 square feet of floor space, which would be worth about eight dollars a

foot for renting purposes at current rates are given over to the dining-rooms and kitchens.

The meals are a trifle more elaborate than those served at the Metropolitan Life Insurance Company's lunch-rooms, costing an average of 50 cents per capita. The following sample menu will afford an idea of the kind of meal which can be served under skilful management for that price. The cuisine is of the highest class, such as would be found at a first-class hotel.

Bread and Butter — Crackers and Milk
Roast Sugar-Cured Ham
Hungarian Goulash
Mashed Potatoes — Carrots and Peas
Fresh Salmon en Mayonnaise
Bread Custard Pudding
Preserved Apricots
Coffee — Tea — Milk

The same menu serves alike for officers and employees. The restaurant is under the control of a manager who directs the purchase of all supplies, including linen and tableware, the employment of help, the payment of salaries, and the taking of monthly inventories to be used in preparing the monthly report to the organization. Extensions and additions of the inventory are checked by the auditing department of the bank which prepares the statement of operations of the restaurant.

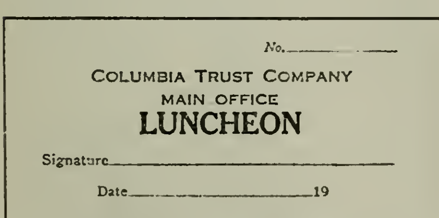

No.
COLUMBIA TRUST COMPANY
MAIN OFFICE
LUNCHEON
Signature
Date 19

Figure 5. Admission Ticket

These statements are comparative, showing the expense of operation as compared with the previous month

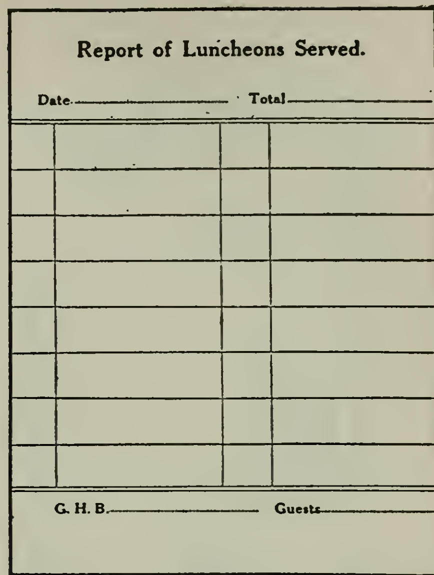
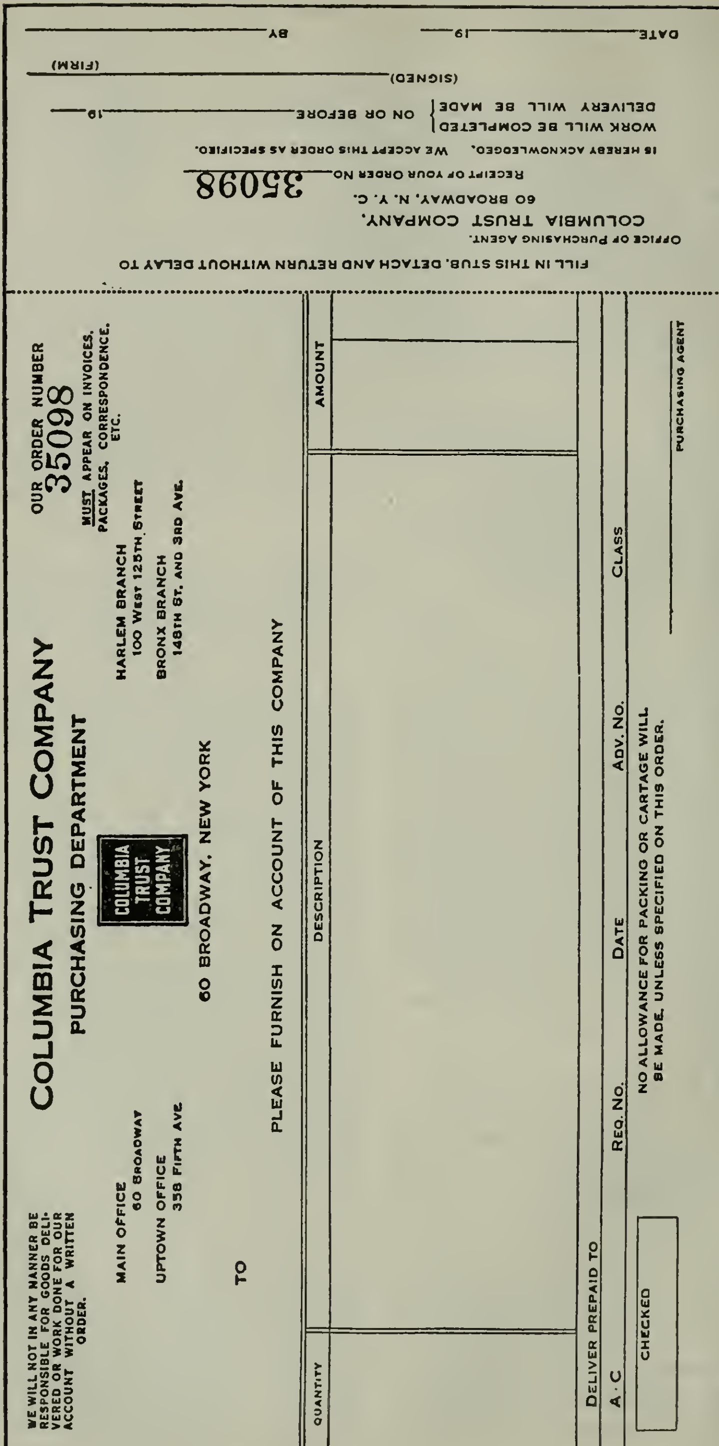

Report of Luncheons Served.
Date Total
G. H. B. Guests

Figure 6. Daily Report of Luncheons Served by the Columbia Trust Company

and the corresponding month a year ago. Operating costs are listed in the following subdivisions: (1) cost of supplies; (2) salaries; (3) rent; (4) cost of equipment. The first subdivision is itemized to include groceries, meat, butter, eggs, fish, vegetables, milk, bread, gas, laundry, steam, ice, soap, and the inventory for the preceding month from the total of which is deducted miscellaneous credits and the inventory for the current month. The statement concludes with a comparative summary of the number of breakfasts, luncheons, and suppers served during the month, the cost per meal including rent and the cost excluding rent. The average cost of 50 cents per capita includes rent. The combined seating capacity of all dining-rooms is 500. There are six serving daily, commencing at 11 o'clock and every 45 minutes thereafter until 1:55 p.m. The menus are prepared by a dietitian and balanced two ways; for food values and for food market prices.



COLUMBIA TRUST COMPANY
PURCHASING DEPARTMENT

WE WILL NOT IN ANY MANNER BE RESPONSIBLE FOR GOODS DELIVERED OR WORK DONE FOR OUR ACCOUNT WITHOUT A WRITTEN ORDER.

MAIN OFFICE
60 BROADWAY

UPTOWN OFFICE
358 FIFTH AVE.

COLUMBIA TRUST COMPANY

HARLEM BRANCH
100 WEST 125TH STREET

BRONX BRANCH
148TH ST. AND 3RD AVE.

OUR ORDER NUMBER
35098
MUST APPEAR ON INVOICES, PACKAGES, CORRESPONDENCE, ETC.

60 BROADWAY, NEW YORK

TO

PLEASE FURNISH ON ACCOUNT OF THIS COMPANY

QUANTITY	DESCRIPTION	AMOUNT

DELIVER PREPAID TO

A C	REQ. NO.	DATE	ADV. NO.	CLASS

CHECKED

NO ALLOWANCE FOR PACKING OR CARTAGE WILL BE MADE, UNLESS SPECIFIED ON THIS ORDER.

PURCHASING AGENT

FILL IN THIS STUB, DETACH AND RETURN WITHOUT DELAY TO

OFFICE OF PURCHASING AGENT.
COLUMBIA TRUST COMPANY,
60 BROADWAY, N. Y. C.

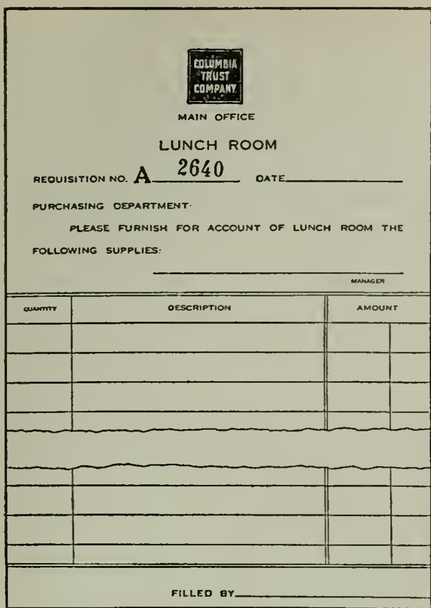
RECEIPT OF YOUR ORDER NO. 35098
IS HEREBY ACKNOWLEDGED. WE ACCEPT THIS ORDER AS SPECIFIED.

WORK WILL BE COMPLETED / DELIVERY WILL BE MADE } ON OR BEFORE ________ 19__

(SIGNED) ________ (FIRM)

DATE ________ 19__ BY ________

Figure 7. Order Form—Made Out In Quadruplicate


COLUMBIA TRUST COMPANY

MAIN OFFICE

LUNCH ROOM

REQUISITION NO. A 2640 DATE

PURCHASING DEPARTMENT

PLEASE FURNISH FOR ACCOUNT OF LUNCH ROOM THE FOLLOWING SUPPLIES:

MANAGER

QUANTITY	DESCRIPTION	AMOUNT

FILLED BY

FIGURE 8. REQUISITION FORM

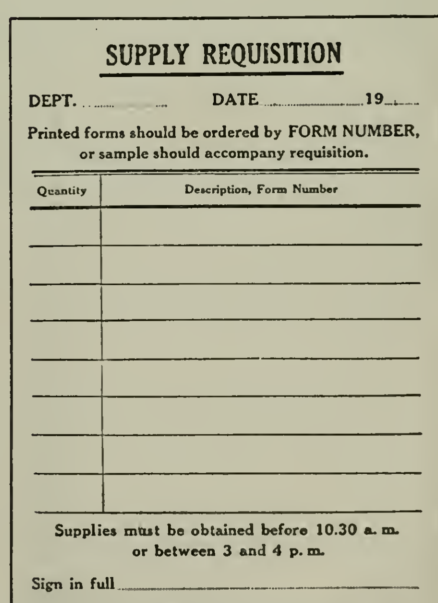
Out-of-season delicacies at fancy prices are not served.

An excellent example of methods and costs in more moderate size establishments is afforded by the Columbia Trust Company of New York, which serves free luncheons to officers and employees at its main office on lower Broadway and at its principal two branches uptown. A tribute to the efficiency of the restaurant management of the Columbia Trust Company is to be found in the fact that it served 11,167 meals in the month of June, 1921, at an aggregate cost of $5,753.76, which gives an average per capita cost of 51½ cents per meal as compared with the average cost of 50 cents for the Guaranty Trust Company, serving more than seven times as many meals and therefore, presumably, in a better position to hold down costs. Without making too fine a point of the relative merits of the respective bills-of-fare, it seems as if the Columbia's extra cost of 1½ cents a meal may be accounted for by a slightly better menu. Here is a sample Columbia Trust Company menu:

Bread and Butter
Sardines, French Dressing
Half Spring Chicken, Creole Sauce
Carrots in Cream Potatoes
or
Cold Smoked Ham or Corned Beef
with Salad
Mocha Ice-Cream Oranges Cheese
Coffee Tea Cocoa Milk

The management's estimate of the meals it furnishes free to its employees is indicated by the fact that a special room is set aside for guests who are entertained at luncheon from the identical bill-of-fare provided for employees. The guest room is often used, saving both the time of officers and a very substantial sum on the cost of entertainment.

Luncheons being provided free employees are expected to eat at home and not to go outside. Each person eating luncheon is expected to fill out


SUPPLY REQUISITION

DEPT. DATE 19

Printed forms should be ordered by FORM NUMBER, or sample should accompany requisition.

Quantity	Description, Form Number

Supplies must be obtained before 10.30 a. m. or between 3 and 4 p. m.

Sign in full

FIGURE 9. REQUISITION BLANK OF LORD AND TAYLOR

Week beginning	MONDAY			TUESDAY			WEDNESDAY			THURSDAY			FRIDAY			SATURDAY			REMARKS
	A. M.	LUNCH		A. M.	LUNCH		A. M.	LUNCH		A. M.	LUNCH		A. M.	LUNCH		A. M.	LUNCH		
	In	Out	In	In	Out	In	In	Out	In	In	Out	In	In	Out	In	In	Out	In	

Figure 10. Weekly Report of Lord and Taylor

a ticket giving his seat number, name, and date. (Figure 5.) The manager makes out a daily report giving the names of absentees from lunch. (Figure 6.) The report also gives the total number of meals served, the number of guests and the number from the offices of the bank's attorneys whose employees are fed by arrangement.

Supplies are procured through the purchasing department on requisition from the restaurant manager. Orders are filled out in quadruplicate on numbered forms. The original on white paper which goes to the firm filling the order has a coupon of even date and number which must be detached and returned with the goods. The second copy on yellow paper is retained by the purchasing department for its files. The third copy on green paper goes to the auditing department, the fourth copy on manila paper goes to the delivery section to check material delivered with coupon of even number. (Figures 7 and 8.)

VI

Perhaps Lord and Taylor's employees' cafeteria on the roof of their department store on Fifth Avenue, New York, may be taken as fairly representative of this class of lunchroom. The lunchroom is in charge of a woman, a college graduate and a professional dietitian. She is given a free hand, with no instructions, but to try to make the annual costs and receipts balance as nearly as may be and to make a monthly report to the assistant to the president. The employees pay for their lunches, but instead of a fixed price for a complete table d'hôte meal they select their food at the cafeteria counters à la carte. This method defeats the fundamental purpose for which such utilities are provided, which is to make sure that employees are

sufficiently well nourished at their midday meal to maintain them at maximum efficiency. Left to his own devices in ordering à la carte the average employee simply will not select a proper meal, but will choose chiefly with an eye to the total of his check.

This is proved by the fact that while a substantial meal (for example, roast beef, creamed onions, potatoes, grape fruit, bread, butter, and coffee) costs 49 cents, the average cost for the 24,700 meals served in the month of June, 1921, was only 24 cents.

This system also leaves the dietitian practically helpless; for while she can, and does, post on charts in a conspicuous place behind the counter, suggestions for balanced rations at various prices, there is nothing to prevent the employees from taking an assortment of gastronomic incongruities which will render them practically useless for the afternoon. Of course, there is nothing about her suggestions to indicate that they are scientific combinations designed to provide a "balanced ration;" if there were it is safe to say that they never would be followed.

The system also makes it difficult to come out even. For the month of June the lunchroom showed a profit of $318. Other months particularly in winter show a deficit so that the restaurant account practically balances in the course of the year.

Lunches served vary from 1,000 in the dull summer months to 1,400 around the holidays. To serve this number of meals requires a woman general cook at $22 a week, a pastry cook at $18, 2 men and one woman helper at $15 to $18, 1 vegetable woman at $12, 1 silver and glass woman at $12, 1 dishwasher at $18, 1 bus man at $18, 4 bus women at $8 and $9, for part-time only, 7 counter women part-time at $8 and $9, 1 counter man for heavy work and serving executives $25, 2 cashiers at $10 and $11 for part-time, a woman tray-cleaner part-time at $12 and a

EMPLOYEES' LUNCHROOM

Month of........

Receipts:		
Sales........................	Meals at...............	=................
Eleto Co. Employees...........	" "	=................
Meals Supplied Check Girls.....	" "	=................
" " Policemen.......	" "	=................
" " Executives......	" "	=................
" " Mutual Benefit..	" "	=................
Total Receipts..................................		
Expenses:		
Cost of Food..		....
Laundry..		....
Ice..		....
Salaries...		....
Renewals...		....
Sundry Expense...		....
Total Expense....................................		
Net Profit...		
Net Loss...		

FIGURE 11. FORM SHOWING NET PROFITS AND LOSS AT LORD AND TAYLOR RESTAURANT FOR EMPLOYEES

supply woman part-time at $8—a total of 24 employees averaging $350 a week.

Forms used in conducting Lord and Taylor's cafeteria are confined to an irreducible minimum. They consist of a simple requisition blank and a multigraphed form summarizing in a dozen items the number of meals served, expenses for various items, and net profit or loss. (Figure 9.)

Among industrial restaurants the general tendency is to furnish lunches à la carte at prices covering only the actual cost of food, though there is no fixed rule. Some managements charge less than cost and make up the deficit. Substantially the same size staff composed of both full-time and part-time employees at approximately the same scale of wages is required in an industrial restaurant as has been described in the case of Lord and Taylor. The more effective lunchrooms provide a properly balanced full meal at a fixed price, for it is pretty generally recognized that a man's ability to work can be very largely controlled if his food can be controlled.

In one detail the line is sharply drawn between the factory and the office lunchroom. It appears to be the universal practice to furnish office workers their lunches free of charge, while it is the prevailing custom to charge factory employees enough to cover actual cost. The reason for this sharply drawn distinction is to be found in the mental attitude of the employees. Well-meaning employers who began some years ago to instal restrooms for women workers and athletic fields for male employees talked so much about "Welfare Work" that anything remotely suggesting an insidious attempt to give their employees something for nothing became an anathema to the latter. In order to induce a factory worker to eat a good meal provided by the employer it is necessary to charge for it. The same thing appears to hold true of department-store employees. Office workers, on the other hand, are either less scrupulous or more enlightened, for they have no compunctions whatever about eating their daily lunch at the expense of the boss.

THE PRO AND CON OF A SALES TAX

BY WILLIAM ANDREW PATON*

AFTER reading "Why Not a Sales Tax?" by Mr. Walter A. Staub, appearing in the April issue of *Administration*, and Mr. B. S. Orcutt's "Why a Sales Tax?" in the May number, I find myself tempted to make a few statements in support of Mr. Staub's excellent paper. Since he covers the ground very thoroughly, decisively answering Mr. Orcutt in advance, what I have to say will be largely a matter of reiteration and emphasis.

Mr. Orcutt holds that a general sales tax has no effect whatever upon the business man who makes payment. The vendor, he thinks, will merely act as a collecting agent for Uncle Sam. The tax, being uniform, will in no degree disturb the equilibrium between enterprises; and the exact amount of the levy will be pushed on and on until it finally rests definitely upon the ultimate consumer.

Although it is difficult indeed to trace the precise effects of a particular tax, either actual or prospective, it is not hard to see that such a proposition is thoroughly unsound. It implies that demand has no effect upon price. It further implies either uniform business conditions or an entire absence of competition. But is price really a matter of the whim of the seller? Can the individual business man add anything to price that he pleases? If he can, does he need the excuse of a sales tax or any other tax? If price is a matter solely of the supply side of the market why have producers allowed prices to fall with sickening rapidity the last few months? Why has the farmer, for example, permitted the prices of his products to slump to pre-war levels? And would they have fallen any less if a sales tax had been in force? If the vendor controls price with such nicety why does he ever operate at a loss? As Mr. Staub points out, a large percentage of our business men lost money even in the boom year of 1918. How does this happen, if price-making involves simply an arithmetical operation by the seller?

The truth of the matter is that a uniform sales tax would fall to an important degree upon farmers, manufacturers, and merchants all along the line, and would burden especially the weaker and less strongly intrenched producers. This thesis can be very easily established. In the first place prices in general are in part determined by demand, the attitudes of buyers. There is no assurance in the market situation that a given amount of output could be sold at an advance of even one per cent. With respect to most commodities demand schedules are certainly highly elastic. In such a case any material advance in price cuts down effective demand; that is, a smaller amount only can be marketed at the higher price. In the second place it must not be forgotten that competition among business men is still a very real thing. Monopolistic conditions of one sort or another are of course present in many lines; but surely no one would have the hardihood to deny the plain fact of business competition. Despite the existence of explicit combination, understandings and agreements, business inertia, etc., there can be no serious question as to the importance of potential and active

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competition among producers throughout industry and its influence upon major price movements.

Now, if one bears in mind these two fundamental facts—the elasticity of effective buying power in the typical case and the presence of competition among sellers, is it not almost obvious that a sales tax cannot be exactly shifted to the ultimate consumer through a precise advance in prices all along the line? It may be in part so shifted but it will be borne in no small degree by producers. The *uniformity* of the proposed tax—upon which so much emphasis has been laid—becomes a matter of small consequence. The important fact to recognize is that business conditions are not *uniform*, even in the single line. Not only do technical operating conditions vary in manifold particulars, but financial strength and success are highly diverse. This fact is evidenced in a striking manner by a comparison of profit rates.

Examine almost any field of business and you find that profits range from high levels down to negative rates, or actual losses. In such circumstances what would happen to prices as a result of the advent of a general sales tax? Certainly there would be no general and uniform advance in prices by just the amount of the tax. The competition among vendors variously situated for the elastic buying power of the community would be likely to result in the impairment of the earnings of producers all along the line; but the burden would be especially serious in the case of the sellers who were in a relatively weak position. Marginal producers[1] might be forced to the wall in the process of readjustment. Whether or not there were any advance in price as a result of the tax would depend upon the conditions of the particular business. In some cases no advance whatever would occur; in others an advance partially equivalent to the amount of the tax would result; in still others the forcing out of marginal producers might intensify monopolistic conditions and ultimately lead to an advance in prices, and a consequent burden on the consumer, of considerably *more* than the amount of the tax.

The points to be emphasized are:

1. In general the disturbance caused by the levy of a sales tax would involve a burden upon business men, especially those least favorably situated.

2. The effect upon prices of such a tax would vary noticeably between different lines.

3. It would only be a coincidence (barring complete monopoly and inelastic demand) if the advance to the consumer in a particular case happened to equal the amount of the tax.

To make the matter more concrete let us note the case of a Kansas wheat grower. How would he be affected by a one per cent sales tax? He is competing with hundreds of thousands of other farmers all over the world. Some of these competitors live in countries where there is no general sales tax and none is contemplated. Further, he is competing with men operating under all sorts of conditions, with a wide variety of costs, markedly different as regards financial strength. Still further, the effective demand for his product is, of course, elastic; that is, buying power will decline as price advances. Under these conditions is it not clear how the above question must be answered? Our farmer will not be able to adjust his price one cent or fraction thereof per bushel because the government is levying a tax upon his gross sales. He will take what he can get in view of a world market situation over which he has no control; and he will bear, with-

[1] From the standpoint of price determination, the producer whose staying in business is barely conditioned by the going state of affairs, and whose withdrawal would significantly affect the supply, is marginal.

out possibility of shifting, the exact amount of the tax. If he is well situated, on a low cost farm, with money in the bank, etc., the burden may be quite endurable. If conditions are just the reverse the sales tax may be the last straw that forces him into bankruptcy.[2]

The above case of the wheat grower furnishes conditions, of course, which are highly favorable to our side of the argument. But surely no one will say that it is not an important case or that it is not typical of the production of nearly all staples. To repeat, the specific producer cannot, by taking thought or by any other process, add even one per cent to his selling price, unless he enjoys monopolistic privileges. The advent of a sales tax in no wise affects the demand for his product. It does not destroy competition. The seller will already be getting as much as he can. As Mr. Orcutt himself says in his coffee-merchant illustration, the merchant will of course "get all the market will stand for his coffee . . . the element of competition and price is not influenced by the tax." This is an overstatement; but the degree to which it is true disproves rather than supports the proposition that the general sales tax could be shifted entirely and exactly to the consumer.

The fact that a uniform sales tax on goods would fall in large measure on business men is not in itself a serious argument against such a tax. But, as indicated above, the burden on producers would be uneven and inequitable. It would in no degree be distributed in accordance with ability to pay. Where a business man was already making small profits it would tend to cut his income to even lower figures. In the case of a producer operating at a loss the amount of the sales tax would be just so much added to the loss. The rain would fall indiscriminately on the just and the unjust. To the well-protected business man, making very high profits, the burden would doubtless be less than under the present system. In the case of the producer operating at a small profit or at a loss, however, the result might be disaster.

Further, as Mr. Staub points out, between businesses, and to some extent within the single field, the rate of turnover varies sharply. Thus the jeweler, for example, may make a relatively large net income as compared with gross sales, while the grain dealer may do a huge gross business on a narrow margin. The inequity of a general sales tax in such circumstances is clear. And a serious change in business methods would be bound to follow its adoption. In fields where the rate of turnover is high we would find that dealers would no longer take title but would operate on a consignment or agency basis.

One further particular in which a commodity tax would be inequitable should be emphasized. Such a tax would place no burden on the producer of services as opposed to commodities. Banking houses, transportation companies, public utilities, and amusement concerns, represent important industries which sell services rather than goods. Many less important examples might be given. The plumber, cleaner, auto repairer, etc., sell only services, for the most part,[3] and hence would completely escape a general tax on commodity sales.

Even if the impossible be assumed, however, i.e., that the general sales tax

[2] To the extent that particular farmers withdraw from wheat production, or reduce output, supply would of course be curtailed and some slight effect on price might result.

[3] It might be noticed that in some cases it would be rather hard to distinguish the commodity from the service transaction. A, for example, has his car overhauled at a repair shop. A few small parts are replaced during this work. Part of the bill would accordingly represent the sale of commodities.

would constitute no burden to the producer but would be exactly passed on to the ultimate consumer, there would, of course, still remain fundamental objections to such a tax. A consumption tax, as Mr. Staub indicates, would violate one of the underlying canons of taxation. It is an axiom of public finance that, in general, taxes should be levied in accordance with ability to pay. Evidently a tax which was shifted to the consumer in its entirety would utterly fail to meet this test. That the consumption of the important staples such as food and clothing (and the revenue from any general sales tax would of course largely be drawn from levies on staples) does not vary at all in proportion to earnings or wealth is of course a familiar fact. The typical laborer, for example, is likely to eat as much as or more than the dyspeptic multimillionaire.

A genuine consumption tax would be largely a tax on necessities. It would approach a per capita levy. This being the case is it not evident that a tax on business sales—still assuming that it might be passed on—would be a fearfully cumbersome way of collecting from the consumer? If the consumer is to be the man who is to pay the tax why not go directly to him and levy on the amount of his purchases? Or add an additional income tax covering that part of his income not reinvested? Some sort of poll tax, as Mr. Staub suggests, would be an infinite improvement over the general business sales tax as a means of reaching the consumer.

One further criticism of a consumption tax from the average business man's standpoint has not received sufficient emphasis in the discussions of the subject. Even if we assume that a particular tax may be entirely shifted to the consumer as far as its explicit incidence is concerned, it should be remembered that such a tax is bound to prove to be something of a boomerang. In an examination of the effect of a particular tax the secondary and, in some cases, more serious influences must be reckoned with. A tax on the consumer would certainly in nowise enhance his earning capacity, and, consequently, his buying ability would be lessened by just the amount of the tax. Is this going to be an advantage to the average business man? Which is more serious from the standpoint of the typical retailer, a tax on differential profits or a slackening in the purchasing power of the general public?

Mr. Orcutt states emphatically that he does not view the sales tax as a substitute for the excess-profits tax. Yet he stops to note in passing that "a proper consumption tax is a tax that is passed on to the consumer just exactly as it is levied, not augmented many times like the excess-profits tax." Here the cat escapes the bag. Otherwise why this gratuitous and misleading statement! One need not be even a close observer of tax matters to note that the proponents of the sales tax are invariably strongly opposed to the excess profits tax. The sales tax propaganda has evidently been pushed not so much for the sake of the sales tax in itself but as a means of taking the scalp of the excess profits tax. As a practical matter, then, a comparison of the two taxes is very much to the point.

Now let us look into this matter a little. Why has the excess profits tax been almost universally attacked and the sales tax defended by politicians, newspapers, and business men? What is the source of this outcry? Would the sales tax really be an improvement over the excess profits tax from the standpoint of business?

It looks very much as if the rank and file of business men were being led by

the nose in this matter. As far as the average business man is concerned a change from the excess profits tax to a sales tax would be a leap from a very mild frying pan slap into the middle of a very hot fire. His clamor in favor of the sales tax and against the excess profits tax is almost inexplicable. It is a case of amazing gullibility! Who pays the excess profits tax? The answer is that about five per cent of our corporations pay ninety per cent of it. Sole proprietors and partners do not pay a single penny of such tax. Over half of our corporations contribute nothing to the excess profits levy. Yet these proprietors, partners, and smaller and only moderately successful corporations are almost solidly supporting the sales tax and attacking the excess profits tax! Certainly in all of these cases the business man is urging something which is directly opposed to his own interests. He is asking the government to repeal a tax which touches him not at all and substitute in its stead a genuine burden.

Even in the case of the corporation which is subject to significant excess profits tax there is some question as to the advantage of the sales tax as a substitute for the excess profits tax. Under the rates now in force the government in effect says to the corporate taxpayer:

> If you make but eight per cent on your invested capital (not a bad rate these days), or if your net income is not more than $3,000, you escape this tax entirely. If you earn over eight per cent plus $3,000 but not more than twenty per cent we take a fifth of the excess, leaving you $3,000 plus eight per cent plus four fifths of the differential. If you earn over twenty per cent we take, in addition, two fifths of the excess, leaving you the initial $3,000 plus eight per cent, four fifths of the excess up to twenty per cent, and three fifths of any further excess. Further, if your entire net income is under $20,000 the tax shall in no case exceed twenty per cent of the amount of the net income in excess of $3,000.

Is this such a disastrous situation for the typical corporation? Will the substitution of a scheme by which the corporation pays a flat tax every time it does a dollar's worth of business, regardless as to whether or not it is operating at a profit, be an improvement? It looks very much as if, with the exception of a handful of cases, the corporate taxpayer also were talking against his own long-run interest in this matter. This is especially true in view of the fact that we have apparently entered a period of much lower profits. A sales tax in these times is utterly opposed to the true interest of business.

To return, in conclusion, to Mr. Orcutt's statement about the effect of the excess profits tax on prices. Such a statement again implies monopolistic control and an ability to raise prices entirely regardless of the demand schedule. As has already been noted, if any such ability existed, prices would have been raised to the roof without the excuse of an excess profits tax. The corporation, on which the profits tax is laid, must compete with the partnership and sole proprietorship on which there is no such tax. Further, the unusually successful corporation, which pays a significant excess profits tax, must compete with the great herd of companies which are making but a modest profit or less. How, then, can a *particular* corporation on which a *particular* excess profits tax is levied, advance its price "four or five times the amount of the tax" or at all?

Not only can Mr. Orcutt's statement about the effect of the excess profits tax on prices be thoroughly exploded by a process of common-sense reasoning, but the actual record of price movements in this and other countries shows it to be utterly absurd. This is pointed out effectively by Professor David Fri

in his book, "Profits, Wages and Prices."[4] Professor Friday shows that following the outbreak of the war prices first fell off sharply. In 1915 they began to advance and continued to advance with ever increasing momentum. By October 6, 1917, which is the date marking the inauguration in this country of the excess profits tax (although no such taxes were collected until the following spring) this country and the world in general had experienced a striking advance in prices. The "Act of 1918," so-called, (actually passed in February, 1919) which carried the very high rates, was preceded by a still further rise in the price level. During 1919, the year in which the reduced rates became operative the upward trend was even sharper than in the previous year of much higher rates. Finally, in the latter part of 1920 and in the present year we have witnessed sharp recessions in prices while the rates of the excess profits tax have remained unchanged. And to clinch the matter from the statistical side it may be noted that the price movement in countries such as France and Italy, which have made use of virtually no differential profits taxes, has been much sharper than in this country.

The Revenue Act of 1918 and its supporting regulations is exceedingly complex; its administration has been involved and slow; it is a simple matter to discover innumerable defects in the present situation. But to lay the blame for the price movements of recent years at the door of our tax legislation is entirely unreasonable. Further, and particularly in this period of lower profits and no profits, the true interests of American business men will not be promoted by the introduction of a general sales tax. Unless something better than this can be suggested a simplification of the present system should be adopted. There are signs, fortunately, that business men are at last awakening to the folly of adhering to the sales tax propaganda; and there are further signs that Congress will refuse to be stampeded into adopting any such program.

[4] Reviewed by O. C. Lockhart, Legal Department of the National Bank of Commerce in *Administration* for April.

A SIMPLE METHOD OF CHARTING SALES PROCEDURE

BY ARTHUR R. BURNET*

THE accompanying chart resembling the diagram of a football game is used in the New York office of a large textile concern to record the movements from department to department of order forms, confirmation notices, and other records that are necessary to the confirming, recording, and shipping of contract orders. It was designed for two purposes: (1) As a means of instructing new men in the routine of sales administration, and (2) to furnish the administrative officers a bird's-eye view of the procedure, in the hope that it might be simplified or shortened. The chart is reproduced here, not because the process that it illustrates is ideal, but because the design can be adopted by many other lines of business.

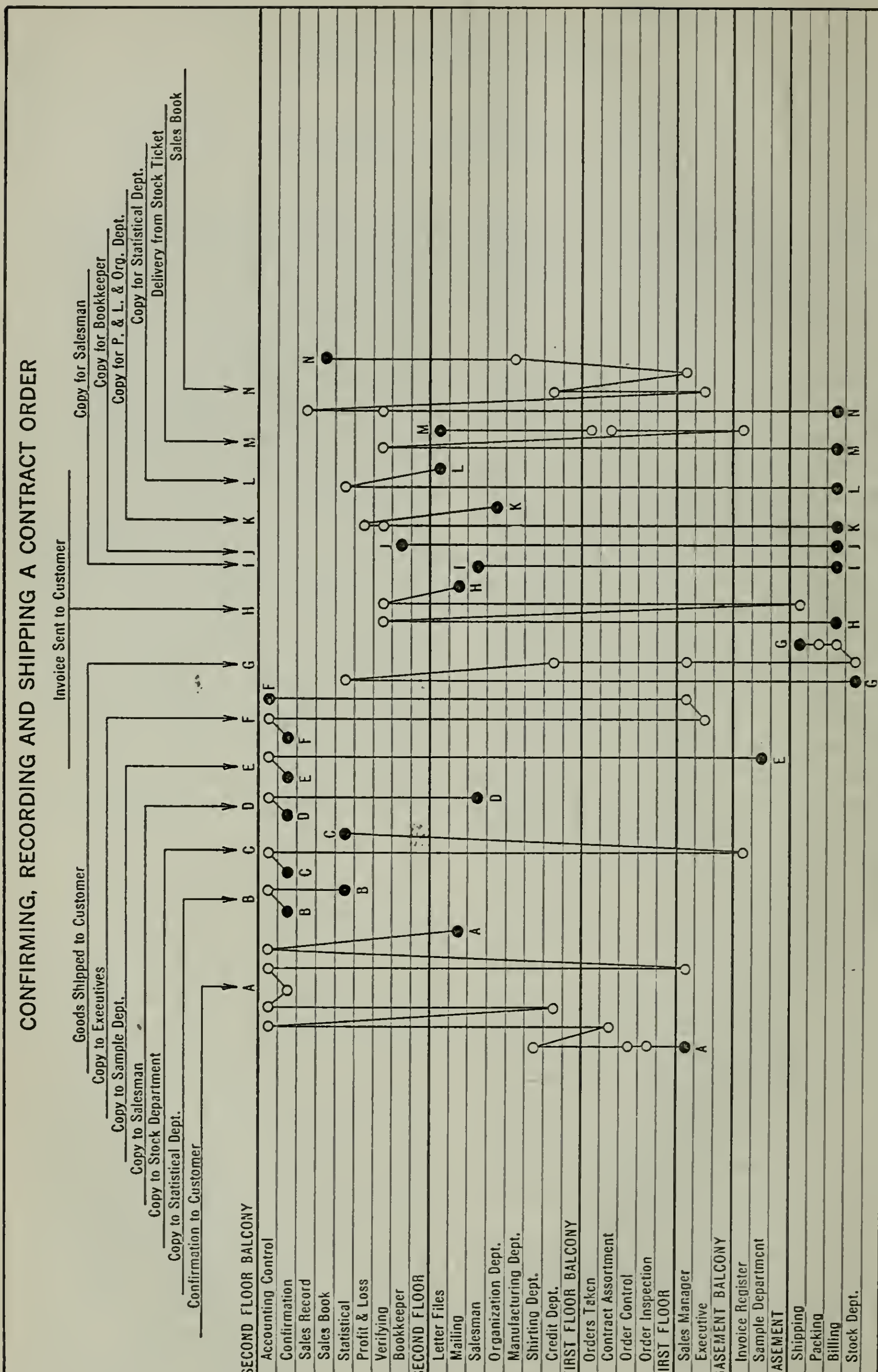
Charts of this kind are made for the purpose of illustrating the handling of both contract and stock orders, but since the principle is the same in both, only one is shown. On the left-hand margin of the chart are written the names of the departments and books of record through which the order passes. They are arranged according to their geographical location in the building, beginning with the basement at the bottom of the chart, and proceeding upward through the basement balcony, first floor, first floor balcony, second floor and second floor balcony. Horizontal lines are drawn across the chart to show these divisions.

The dots and circles at the right of the names of the departments or books of record denote the beginning, end, and intermediate steps in the procedure. The lines connecting the dots and circles show the steps the order must take in passing from department to department. The letters near each dot correspond to the letters underneath the arrows, and refer to the names at the top of the chart. These describe the groups into which the individual steps of the procedure are divided. The arrows point to the groups.

In order to understand this chart it will not be necessary to explain all the steps in the progress of the lines from left to right. Therefore, the description is limited to the first group!

Confirmation To Customer. (Shown in the chart by the irregular line A–A). When an order has been received for future delivery, it is known as a contract order. The sales manager approves it as to prices, terms, delivery etc., and sends it to Order Inspection, where it is examined in respect to colors, patterns etc., and if correct in every particular, it is stamped, and passed on to Order Control. Here a record is made in numerical sequence, and the order is given an identification number by which it is hereafter known. If the order is one for shirting material it is sent to the Shirting Department for its inspection, and a stock sales record is made to show the number of pieces sold, and the balance to sell for each pattern of the goods. The order is then sent to Contract Assortment where cards are arranged in alphabetical order containing the name and address of each customer, the kind of goods ordered, the amount, width, color, prices, assortment shipments, etc.

* Consultant in Business Statistics and Graphic Methods, New Rochelle, N. Y.



Graph Recording Movements of Sales Order

Such cards tell what colors, patterns, etc. are to be shipped and when.

From here the order is sent to Accounting Control which is really a central place of registry by means of which the location of an order can be determined at any time. The order is checked on the register, using the identification number which it originally received in the order control department. Before the order can pass from one department to another its movements must be checked in the accounting control register. In the Credit Department the records are examined, and if the customer is considered financially responsible to the extent of the specified amount of the goods, the order is approved, and thereby becomes ready to be "booked" and confirmed. The Confirmation is a copy of the order. An original and six duplicates are made at one time—two for the customer, one of which is for his files, and the other is to be signed and returned. The other five copies are distributed to the statistical department, stock department, salesman, sample department, and to the executives, as is shown on the chart by B, C, D, E, and F.

Several practical results followed the original drawing of this chart. One was the rearrangement of the offices. A glance showed that most of the dots were at the top and bottom of the chart, which meant that there was a large amount of interoffice communication between the basement where the stock was kept, and the stock and billing records made, and the second floor balcony where the accounting and statistical departments were located. These departments were brought nearer together with advantageous results. Money saved by the prevention of needless running around, calling on the telephone, or the dispatching of papers, is money earned.

Another result was the elimination of extra copies of confirmation notices and invoices. The reader will see in the chart that there were five carbons of the one made, and six of the other. It was found that one department had no real use for these copies. In every large business the saving of a few duplicates in a single process often mounts up to a considerable item in the course of a year. It sometimes happens that copies of records or even the actual records themselves are continued year after year because somebody authorized them long ago, but it has occurred to nobody since to order their discontinuance. The drawing once a year of a procedure chart like the one shown in the illustration is worth while if it does nothing more than to show where record making can be dispensed with.

A procedure chart of this kind has a place in manufacturing and is recommended as a means of putting on an orderly basis the handling of production and cost records. There is an economy in handling records as there is in handling raw materials or of goods in process of manufacture. And yet we know that this is a matter that has not been given the attention it deserves. Too often the policy followed is: "First come, first served." We all have observed the routine work of one department held up because another department was using the records, e.g., the cost department, the general accounting department, and the statistical department wanted the same original record at the same time, but for different purposes. Confusion could be avoided if an orderly schedule were arranged by means of a procedure chart.

Such charts are invaluable for instructing new men in the routine of the establishment. They should be among the illustrations in the office manual of standard practice.

WHEN PROFITS FALL OFF

BY STEPHEN GILMAN*

AN article under this same title by H. D. Grant appeared in the June issue of *Administration*. In his article, Mr. Grant proposed a new technique of analysis to explain the reasons for decreasing profits.

Mr. Grant's article contained much of merit, and readers of *Administration* may well be thankful to him for having opened up a subject at once so important and at the same time so little understood and controversial.

Without in any way attempting to belittle Mr. Grant's contribution it appears that exception may be taken to his suggestions from four different angles.

1. His selection of one year as a "focal year" without sufficient comment or explanation resulting in the possibility of a false understanding by the average reader.
2. His averaging of the figures for the two subsequent years, which appears to obscure the actual facts.
3. His use of the net sales for the focal year as a basis for percentage calculations of subsequent years. This furnishes figures which, while perhaps technically correct, do not appear to harmonize with what may be termed "executive psychology."
4. His failure to comment upon and distinguish between the various classes of expense with reference to their fluctuating or non-fluctuating tendencies.

Literally interpreted Mr. Grant's "focal year" is quite clear. It is believed that in using this term he meant exactly what he said. However, readers might very easily confuse this term with "normal year" or what statisticians term "modal year." Strictly speaking "focal year" carries with it no implication of normality.

As a matter of fact normal or modal percentage figures are exactly what the business executive really wants as a basis for profit and loss comparison and analysis. Either Mr. Grant's phrase should have been more clearly defined or else the value of normal or standard percentage figures should have been discussed and some suggestions given as to the proper procedure in securing them.

Referring to the second point of objection, I can see little or no justification for averaging the 1918 and 1919 figures. They are quite different and the averaging process tends to obscure rather than reveal the facts. It is arithmetically true that a profit of $4,585 (1918) and a loss of $7,163 (1919) is equal to an *average* loss of $1,289. But this appears a gross misuse of the term "average." As Prof. Horace Secrist has said, "Every average is a sort of fictitious substitute for the details which it replaces, serviceable when the conditions for which it stands are known, but deceptive when they are ignored."

Certainly an average to be statistically valuable must typify (reasonably well at least) the figures which it replaces. It is arithmetically true that the average age of John and George is 22 years even though John is only 2 years of age and George is 42 years of age, but it is not anywhere nearly so valuable an average from the interpretative viewpoint as if John were 21 years of age and George were 23.

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The criticism here is not based merely upon a statistical technicality, but upon an actual obscuring of the facts, tending to cloud the analysis rather than to clarify it. Furthermore, for interpretive purposes the short time periods are more valuable than the long. Monthly figures are usually to be preferred to annual figures. Certainly annual figures are to be preferred to the twenty-four-months' figures which Mr. Grant's method produces.

If any averaging should be done in connection with Mr. Grant's proposed method, it would occur far more properly in assembling normal percentage figures for the focal year rather than in combining the quite different results of two following years in order to compare their average with a single focal year.

Passing on to the third point, it appears that the method employed by Mr. Grant in attempting to explain the decrease in net profits is open to an objection which has its root not so much in accounting or mathematics as in psychology and human nature.

Mr. Grant proposes to explain the changes in the 1918–19 figures (in their relation to the 1917 focal figures) by dividing the 1918–19 averages by the 1917 net sales.

The results of this procedure are reflected in his Table II as follows:

The sales show a decrease of		5.67%
Cost of goods sold show a decrease of	0.53%	
Selling expense shows a decrease of	0.17%	
Administrative expense shows a decrease of	0.48%	
Whole cost		1.18%
Net average decrease for one year is of sales for 1917		4.49%

While this procedure may be technically correct (it not seeming desirable to enter into this phase of the matter) it is contended that the average executive reading these figures will misinterpret their meaning. It is the natural tendency for every reader to attach the greatest importance to the largest figures and in this instance the largest figure is 5.67%. The natural but superficial conclusion would be that the cause of decrease in net profits is traceable almost entirely to the decrease in sales volume.

Of course from one viewpoint this is true, and yet it is not a very helpful answer to the executive during that period "when profits fall off."

During a period such as the one through which we have just been passing the cure for falling net profits is usually not increased sales volume. This is because conditions may make it next to impossible to secure increased sales volume. Attractive as it might be to increase the volume of sales, the selling expense necessary to secure a measurable increase might be so great as to offset the advantage desired.

During a period of deflation the control of net profit is by no means a simple matter of controlling sales volume; rather it is a matter of controlling the other profit and loss factors, keeping them in harmony with the decreased sales volume.

In other words, if there are two solutions to a business problem and one of them is rendered almost impossible by force of uncontrollable circumstances, then the other should receive preferred consideration.

My objection to Mr. Grant's analysis is that it obscures the most important fact of all—as between the focal year and the average year the falling profit is primarily due to an increasing ratio of cost of goods sold to sales (roughly

88 per cent of the change in net profits being traceable to this one factor alone).

At the risk of a counter attack by Mr. Grant, who may justly claim that his focal year was not intended to represent a normal year (although he refers to it as a "fairly or averagely prosperous year") I propose an entirely different analysis which I firmly believe would be much more acceptable to the executive since it would fit more intimately into his manner of thought. I propose that for focal figures certain normal or "modal" percentage relationships be obtained. The proper way of securing such figures is, I believe, entirely outside of the scope of the present discussion, and I am further willing to admit that it is not by any means an easy task to secure figures which will be truly representative.

I would next suggest that these normal percentages be applied to the net sales of the period under analysis, thus securing an artificial normal Profit and Loss Statement for that period. Such an artificial Profit and Loss Statement could then be compared item by item with the actual Profit and Loss Statement for the same period, and the plus or minus differences determined.

If this were done (assuming Mr. Grant's focal year percentages to represent normal percentages) the figures could be analyzed as in the following:

	I	II	III	IV	V	
			Average 1918–1919			
	Per Cent	Focal Year	Actual	Adjusted by 1917 %	Diff. III over IV	Per Cent
Net Sales	100.00	$377,615	$356,211	$356,211	......	....
Cost of Sales	75.30	284,346	282,341	268,228	$14,113	5.27
Gross Profit on Sales	24.70	$93,269	$73,870	$87,983	......	....
Selling Expenses	15.36	57,981	57,350	54,714	$2,636	4.82
Net Profit on Sales	9.34	$35,287	$16,520	$33,279	......	....
Administrative Expenses	5.19	19,621	17,809	18,487	$678*	3.66*
Net Profit or Loss*	4.15	$15,665	$1,289*	$14,782	$16,071	....

* Accurate to the dollar.

It is contended that this analysis should show a chief executive where his current figures are departing from normal and should afford him an actual basis for readjustment as well as give him a complete explanation of the changes in the figures themselves.

In order to show how the process of averaging the year 1918 and 1919 serves to obscure the actual facts the following table is given. This table shows a separate analysis for each of the years based upon the use of a normal percentage figure for the focal year.

	I	II	III	IV	V	VI	VII	VIII	IX	X
			1918	1918	1918	1918	1919	1919	1919	1919
	%	Focal Year	Actual	Adjusted to 1917 %	Diff. III over IV	%	Actual	Adjusted to 1917 %	Diff. VII over VIII	%
Net Sales	100.00	$377,615	$324,264	$324,264			$388,159	$388,159		
Cost of Sales	75.30	284,346	251,697	244,171	$7,526	3.08	312,985	292,284	$20,701	7.08
Gross Profit on Sales	24.70	$93,269	$72,567	$80,093			$75,174	$95,875		
Selling Expenses	15.36	57,981	51,271	49,807	$1,464	2.95	63,429	59,621	$3,808	5.71
Net Profit on Sales	9.34	$35,287	$21,296	$30,286			$11,744	$36,254		
Administrative Exp.	5.19	19,621	16,711	16,829	$118*	.70*	18,907	20,145	$1,238*	6.15*
Net Profit or Loss*	4.15	$15,665	$ 4,585	$13,457	$8,872		$7,163*	$16,109	$23,271	

* Accurate to the dollar.

It is believed that if the executive had studied the 1918 analysis as given above, the results for the year 1919 might have been quite different. Very possibly the departure from normal in 1918 might have been corrected (in whole or in part) in the year 1919. Certainly the arbitrary averaging of the figures for two years conceals an important wayward tendency on the part of "cost of sales" and to a somewhat lesser extent "selling expenses."

The fourth objection raises an old question which is currently reflected by popular talk about "overhead." It is pretty clearly understood by nearly all business men that certain expenses are more or less non-fluctuating in character (in their relation to sales volume) while other expenses conform rather closely to the volume of business. In the typical business organization today this difference is receiving special attention, being reflected by important wage cuts and various movements towards retrenchment.

Unfortunately, lack of real study and analysis often makes such retrenchment policies unwise. The average executive is too prone to study expenses from viewpoints other than the ones suggested. The fact that certain classes of expense are non-fluctuating and cannot be cut to any great extent without causing real damage to future business profits is a fact which many executives instinctively acknowledge but cannot verify or measure.

The current practice of reducing all expense items to percentages of sales is misleading when applied to the non-fluctuating type of expense, since this results in fluctuating percentages, whereas the expense itself has hardly changed.

Any attempt to interpret and analyze profit and loss figures where

the medium of analysis is percentages will always fail to the extent such non-fluctuating expenses loom large in the total.

Actual net profit control can result only from scientific analysis as applied to the accounts and statistics which reflect business operations, but if false impressions are to be avoided, separate studies should be made of each class of expense and income in order to determine the variation of the figures from period to period, not only in relation to net sales, but in relation to their own average.

The plotting in detail of the various elements of the monthly Profit and Loss Statement over a period of a year or two on semi-logarithmic paper would reveal some surprising facts to executives who have been accustomed to rely upon net sales percentage calculations as their basis for net profit control.

In conclusion, it would represent a complete misunderstanding of the purpose of this article if it were assumed to be an attack on Mr. Grant's excellent contribution. Rather it should be considered as a friendly critical review, attempting through discussion to shed additional light on a most important phase of business analysis.

THE BUSINESS BUDGET AS PROPHET AND GUIDE

BY JOSEPH DANZIGER*

AN old professor of Economics used to delight in illustrating a point with the story of a student who described a crab as "a red fish that walks backward."

"The answer is correct, with three exceptions," commented the instructor. "The crab is not a fish, it is not red, and it does not walk backward."

Similar exceptions may very justly be taken to the budget system as it stands by itself. Unless the makers of the budget are gifted with uncanny powers of foresight, the actual operations are liable to differ very materially from the budget estimates. Not that alone, but in a business large enough to justify the use of a budget, ordinary accounting methods fail to disclose summaries of expenses soon enough to permit of an effective control.

Although the subject is comparatively new, enough has been written regarding the technique of budget-making and therefore this phase of the subject will not be gone over again here. However it will scarcely be disputed by anyone who has had a hand in budget-making that the difficulties in arriving at a fairly reliable estimate are many. This has been most decidedly the case during the past few years of war and post-war fluctuations. A graph showing the course of any financial or economic development, beginning with the pre-war period, describes a curve with prodigious peaks and depressions, to which there is no precedent, not even during the Civil War period and the era of reconstruction that followed.

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Under such unprecedented circumstances the budget can scarcely be said to estimate. Rather it is a hazardous guess. To follow blindly such a guess would be to invite disaster just as much as if some other guess were adopted as a fixed rule of action.

Not only commercial budgets, but also legislative budgets are likewise afflicted with the same uncertainty of outcome. During the first quarter of the current year the taxes in France produced less than 75 per cent of the amount assumed in the annual budget. As governmental expenditures are based upon approximately 100 per cent of the anticipated revenue, the situation in France means a large deficit for the year, unless means are promptly adopted for retrenchment. As a matter of fact, however, they are well into the second quarter before the deficit is discovered, and the quarter will probably have elapsed before the legislature can take steps to effect retrenchment. So that in order to balance outgo with income it will be necessary for France to reduce her expenditures by 50 per cent for the last half of the year. Such radical action would, of course, be neither possible nor desirable in a national exchequer, especially as a nation can easily fund its deficit.

The case is cited here to illustrate the imperative need for early and frequent control of the budget estimates and to show the folly of waiting until the rapid course of events have rendered any change of tactics useless if not impossible.

By ordinary accounting methods we found that the exact summaries of expense disbursements were not avail-

able until the latter part of the following month. Nearly sixty days would therefore elaspse before certain of the expenses incurred could be verified. It is obvious that a better method would provide a means whereby the controller could determine immediately what limitations should or should not be placed upon certain expenditures, and not compel him to wait until after an acute emergency threatened to develop into a chronic weakness.

The general manager, therefore, required a budget-control record which would reflect the facts regarding expenses at frequent intervals. Our system of branch and factory accounting provided for separate sets of books for each organization, and this made the difficulty of securing the desired summaries from the accounting records all the greater. It was apparent that we would have to depart from conventional accounting methods and secure our information as promptly and frequently as the situation required, relying on an ultimate reconciliation with the books to test its accuracy.

A daily report was not impossible, in theory, and this was at first planned. An analysis of this proposal, however, soon developed fatal objections. It would have called for more labor to keep such a record than the results would justify and the daily report would show such violent fluctuations that it would be impossible to grasp its significance without elaborate analysis.

The ideal budget control record should be self-explanatory and reveal at a glance to the controller or any interested executive, who might not be so well versed in accounting methods, just what was going on in the business and why certain changes were called for.

A week was finally selected to be a better standard of time. It is fairly long, reasonably frequent, and enables each department or bureau to report all its activities up to and including Saturday closing time. The serious objection to the week is that its end rarely coincides with the last day of the month and therefore a reconciliation with the books as at the close of the month would not be possible.

Therefore, each month was divided into a number of unequal periods, all but one of which would terminate on Saturday. If the days preceding the first Saturday in the month constitute a major fraction of a week, they are regarded as the first period. The three full weeks then follow and the days following the last Saturday are annexed to the previous week if they are insufficient to make up a major fraction of a week. Thus in nearly all cases there are five periods to each month. The accompanying calendar (Fig. 1) illustrates the method. The first period being over half a week ends

CALENDAR

Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Fig. 1. The Calendar Period

on Saturday, the fifth. There follow three full weeks and the last period runs from the 28 to the 31, inclusive. The first period of the following month would include the first two days annexed to the first full week. This requires that all fixed charges and the

budget estimates must be prorated according to the irregular periods.

The chief difficulty lay in providing a means for obtaining a report of every expense charge at the close of each of the arbitrary periods. It was manifestly impossible to obtain this information from all the branches and factories by ordinary accounting methods unless we wished to create a very large force to take care of this one record.

Another objection to relying on such accounting records was that we desired to have every disbursement reported during the period for which it was incurred, regardless of when it was posted. Lighting expense is not paid until long after the light has been used, or a printer may not present his bill until some time after the supplies are consumed, etc. On the other hand, rent is paid in advance and some payrolls are weekly, some semi monthly, and others monthly. How then were we to create a standardized method of reporting current expenses as fast as they were incurred and without resorting to a duplicate set of records?

The problem was rendered all the more complicated because of the essential diversity of disbursements. Some of the obstacles we had to overcome were characteristic of our particular business, but as the same general principles apply to all businesses only few of these perplexities need to be mentioned in passing. For instance, certain publicity expenditures are partly charged for supplies taken from stock, partly for special purchases, and the greater part for contingent contracts. In some cases the entire charge would properly apply to the period when it was made, but there are many others which are a provision for an extended time and the entire amount would have to be prorated over the several periods to which it applied. The method of controlling supplies is simple and is fully explained in the following paragraphs. Special purchases are more difficult. If the useful life of a purchase was two months, it would, of course, be good accounting practice to charge the cost as soon as possible; but this is not true of the budget control record which is supposed to reflect the exact expenditure for each arbitrary period.

It would have been possible to analyze each purchase requisition, but the process would have involved an enormous amount of clerical work. It was therefore decided to provide a record on the purchase requisitions so that each one should show whether the purchase was to be used immediately or, if not, the beginning and ending of its estimated useful life. When the purchase is ordered, the purchasing department should immediately report the amount and the period of useful life. The amount is prorated by the budget control clerk and recorded in his file cards. In making up the budget control record for a period it is then only necessary to go over these cards and add to the various accounts such purchases as have been made for that definite time.

Contingent contracts are peculiar, but possibly not so rare as one would think. In our experiences they are incurred for publicity or sales promotion purposes and involve arrangements with artists or engraving houses. It does not appear possible to arrive at an exact amount at the time the contract is made and what is more uncertain, the artist frequently fails to send in a bill until he needs the money, the latter contingent depending entirely upon his artistic temperament. Frequently a bill is presented weeks or even months after the matter should have been settled.

Although these items are relatively small compared with the total expend-

itures, they constitute an important element in certain accounts, and a proper analysis of these accounts is impossible in the absence of contemporary data. It was, therefore, provided that each department head should furnish an estimate of all contracts undertaken by his department, with the period of estimated life of the purchase. This serves a double purpose, for if the department head estimates too low, it soon becomes apparent by a discrepancy between the budget control record and the books of account. It is evident then that someone is charging him more for services than, in his judgment, they are worth. By similar decisions from case to case, we finally arrived at the correct solution for all of our expenditures.

What at first appeared to be a riddle of the Sphynx presently proved itself as simple as the egg of Columbus. It was not in vain that the writer had spent a year of his life among Washington bureaucrats of the Income Tax Unit. "Collection at the source," was the solution. Uncle Sam does not care when, if ever, you clip your coupons and cash them. He gets his taxes at the source and your records are merely a check on the transaction.

This principle applied to the budget control is perfectly sound, though to be sure, every business may not permit its application in exactly the way we have found it most efficient. A good analyst can readily determine the best way to accomplish his aim so long as he keeps in mind the principle of "collection at the source."

In the classification of sources, I have followed the practice which we found adapted to the business. The budget control record is too new to permit of any other than empirical treatment and I have been unable to formulate a theory of compiling the record which will apply infallibly to every situation. After a thorough search of the economics division of the library and inquiry among a number of large houses in the city, I became convinced that our method is unique. In devising the record mistakes may well have been made, but all pioneers are susceptible to errors which later experience proves. Nevertheless it is apparent that the budget control record is an economic analysis rather than an accountancy record. The treatment must be along the broad principles of economics rather than the application of those principles as adopted by accountancy.

According to our experience expense disbursements are separated under six classifications:

1. Supply requisitions.
2. Purchase requisitions.
3. Petty cash disbursements.
4. Pay-rolls.
5. Journal vouchers.
6. Fixed charges.

The distinction between supply and purchase requisitions may not always be made. In our practice the former are handled by the stockroom, the latter by the purchasing department. It was also necessary to distinguish between purchase requisitions chargeable to an inventory account and those chargeable to an expense account. In order to avoid confusion it was required that all purchase requisitions which required goods for immediate use must record the expense account to which the charge was to be made. Otherwise the purchase would be assumed to be for stock and could not be delivered without a subsequent supply requisition. This put a stop to the easy-going method of omitting the coding of a requisition until after the invoice had been presented to the department head for his O K.

The summary sheets kept in the

stockroom, the purchasing department, and the cashier's office disclose the disbursements under the first three classifications. The totals are taken off for each account on the last day of the period and forwarded to the budget control clerk.

The other classifications offer more or less trouble according to the nature of the business, but the fundamental principles are the same in all cases. An allocation of disbursements must be relied upon to reflect the true facts with reasonable accuracy. Such discrepancies as may occur, should either be ignored altogether, or if they are important enough an adjustment can be made during the following period. If this suggestion seems too inaccurate, the reader must not forget that the budget control is not an accounting record but an economic analysis intended to serve as a mentor to the administration. It bears the same relation to the true accounting record that the preliminary count at an election bears to the official count. So long as the budget control record discloses with reasonable accuracy how much was spent for any one account or group of accounts the management can wait for the monthly statement to ascertain the exact facts to a penny.

For a full week we use the weekly pay-rolls, and for a fraction of a week the pay-roll of the previous week is adopted for the days following. This method is, of course, productive of slight inaccuracies which may be adjusted in the period following their discovery. The same method applies to monthly and semimonthly pay-rolls. The last available pay-roll is adopted as the pay-roll for the following periods. Of course, it would be possible to get a very accurate estimate of pay-rolls at the close of the week, but the additional labor necessary to produce this information does not appear to be justified. Even if this method were carried through without any adjustment the total discrepancy would not be great as it tends constantly to correct itself.

Journal vouchers affecting profit and loss are summarized for each period by the chief accountant or one of his subordinates. It is possible to anticipate some disbursements such as insurance or interest at the beginning of the month, and make an adjustment for any error in the estimates in the succeeding month. The person in charge of the budget control record should be intelligent enough to discriminate between those charges which are susceptible to estimate and those which are casual.

On the other hand, it has been advanced that such charges as depreciation, which are constant, or credits to reserve for bad debts, which are solely in proportion to sales, need not appear on the budget control record. However, it is better that every disbursement should be disclosed by the record so that the totals shall show the exact deduction from gross profits. Then, too, the same argument might be applied to stock and shipping expenses. If we ship no goods we have no charges for paper and string, just as there would be no charges for reserve for bad debts. In order to avoid this sort of *reductio ad absurdum* it is best to include every item of expense, especially as in this way only can we arrive at an estimate of net profits at the close of each period.

Under "fixed charges" are included all expense items which cannot be reported from any other source enumerated above. The classification includes all items of overhead which are not subject to the supporting vouchers. All of them may be accurately predetermined by the proper executive. In this classification we include publicity

items that are contracted for a year in advance, administration salaries, if it is decided to have these appear in the record, and whatever is of such a nature as to permit its predetermination.

The budget control record contemplates two things: primarily, to furnish a weekly summary of expense disbursements with sufficient accuracy to be useful in determining the policy of the business; and secondarily, to accomplish the former with the least effort and without interrupting ordinary accounting routine. The data are therefore collected from the most available sources without passing through the customary accounting and auditing channels. For instance, it would be possible to use the voucher register as a source; but if we did this, although a little time would be saved and we would be sure that all requisitions had been properly coded, the information would not be so promptly rendered, and it would not be properly allocated in accordance with the periods of time to which each entry would apply. As it is, the disbursements appear in the budget control record long before the supporting requisitions have been audited and registered. Of course, this does not entirely eliminate the tendency to errors if the requisitions have been improperly coded, but the main facts are correct and the chances of a requisition being coded in the wrong group are most remote.

The record forms are ruled in double columns, each pair showing the budget estimate and the actual figures side by side. The left-hand pair of columns are for estimated and actual sales. Each account in the group follows in sequence and the last pair of columns discloses the actual and budgeted totals for the group and the percentages of estimated expenses to estimated sales in comparison with actual percentages. All estimated amounts are in black, and actual figures in green or red according to whether they are favorable or unfavorable. Of course, this color scheme is not essential, but it is a valuable aid in visualizing the significance of the array of figures. At the close of each month the totals for the year to date are brought down showing to what extent any individual account or controlling account has varied from the estimate. This, of course, is of more importance than the fluctuations during part of a month or even an entire month.

If the record is properly kept, the total percentages should disclose a net profit very close to that reported a few weeks later in the profit and loss sheet. This is the acid test of the system's accuracy.

With this record in hand, the chief executive possesses a chart which tells him just what course his business is taking. Even of greater importance is the fact that he can obtain this information early enough to stop any leaks that might prove serious if permitted to continue. He can see at a glance how much sales differ from the estimated amount. He has a resumé of the total expenses for the week or he can immediately refer to the smallest item composing the total, and finally the comparative percentages tell him whether he is sailing in safe waters or nearing the shoals.

The budget control record is far from perfect as it stands today. But even as it stands it is more than a chart for the business pilot. It is the first radical departure from ancient accounting methods since the early renaissance when the old Lombard bankers invented and used double-entry bookkeeping.

THE STATUS OF A CREDITOR NATION

BY GUY W. WOLF*

NO Economist who favored a tariff for the United States before 1914 can favor a tariff today. For two generations prior to the European War the United States was a debtor nation. That is to say, foreign investments in American railroads, mines, forests, farms, and factories, foreign steamship lines, foreign banks, and foreign insurance companies yielded returns to the investors of Europe and Germany and France which liquidated the commodity export balance of the United States.

Our own money went into our own activities; we were busy developing our virgin resources and had no time or inclination for investments abroad. It did not pay for the American dollar to be invested in African mines or ocean-going steamers; we left those slow-return enterprises to the older creditor countries of Europe, especially to England.

During this period, incidentally and quite by the way, we produced a substantial surplus of goods, which were offered to whomsoever could pay for them. We imported from abroad only to meet our own shortages in certain lines not yet developed. We taxed very heavily any foreign goods coming to our shores, on the broad principle that those goods were not needed. We owed the world money that could be paid in goods, we could see no reason for letting any foreign producer sell his surplus in our markets.

And we were right—so long as we were a debtor nation, owing the world several hundred millions of dollars each year. It was to our interest to keep down imports so that we could the more easily pay our obligations.

In 1914, at a conservative estimate, we owed the world five billion dollars, upon which the annual interest charge and yield was about 350 millions.

With the outbreak of the World War, however, a new set of conditions was introduced. The United States was called upon to supply enormous quantities of food, clothing, and other munitions to the belligerents in Europe and Asia. Those goods had to be paid for. They could not be paid for in other goods because Europe was using all her own production at home or in the field.

Hence it came that foreign countries, desperately in need of our supplies, sold their investments in America, borrowed money from our government, and bought from our manufacturers on credit. During the seven years since the war broke out the balance sheet has changed from a simple statement in 1914 showing the United States owing the world five billion dollars to a statement showing the world owing us sixteen billion dollars. This huge sum, inconceivably large, is composed of the following items:

U. S. Government loans	10 billions
Loans of U. S. Investors	2 billions
Bank and other credits	4 billions

To offset this there is remaining only about two billions of foreign investments in American industrial activities, the balance of the five billion having gone into the coffers of the American farmer and manufacturer during the war.

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Before the war, as we have stated, the excess of exports over imports, which was normally half a billion dollars or so, was liquidated by invisible imports, including yields from investments, premiums paid to foreign insurance companies, freights paid to foreign shipping lines, charges paid to foreign banks, remittances by immigrants, and by the expenditures of American tourists in Europe and Asia. These items, together, just about equaled the commodity export balance. Any small difference was paid in gold.

Today, however, no such expedient for meeting an export balance is afforded us. The 16 billions of dollars that Europe owes us for goods bought and not paid for is being increased this year by about two billions, and there is little prospect that the total credit balance in our favor will be less than 20 or 22 billions by the end of 1922.

During the war we built up our own merchant marine and marine insurance companies, we are developing our own foreign trade banks, we have bought back two-thirds of our securities held abroad in 1914, our immigrants will send less and less money abroad as time goes on because we are shutting immigrants out, and the tourist traffic alone will remain as a course of "invisible imports." It is too much to expect that they shall spend three or four billion dollars abroad each year.

The dilemma that faces us today, then, is simply this: How can we collect what the world owes us and at the same time keep the appurtenances of foreign trade and the great producing machinery that we have developed?

It is obvious that we cannot get gold; we would not want it if we could get it; and there is not enough gold in Europe to pay one-fourth of what Europe owes us. If we did take all their gold, we would wreck their financial systems and kill the goose that lays the golden eggs. Besides, more gold would do us much harm and no good whatever.

We cannot cancel the debts owing to us unless our debtors are hopelessly bankrupt.

The only way in which we can collect is to take goods. Just as before 1914 the creditor nations of Europe, especially England, took their balances in goods from their debtor, the United States, so must the United States in these later years take her balances in goods.

There is no other alternative.

Unless we are prepared to take goods, we must scrap that part of our producing machinery which now supplies each year 33 per cent more goods than we can use at home. We must slow down industry, throw one-third of the population out of work, close up shop and factory and mill, and get back to the days of 1914, producing for ourselves and selling an occasional surplus.

In addition, we must write off our books as uncollectible the 16 billions of dollars that the world owes us, scrap our merchant marine and other appurtenances of a great foreign trade, build a horse-high and pig-tight tariff wall about the country, and settle down to the great occupation of making a living by taking in each other's washing.

For America there is no alternative course: it must be "Full speed ahead" or "Full speed stern." As for the rest of the world, it waits hopefully and fearfully while we make up our mind.

PROBLEMS FOR THE BUSINESS EXECUTIVE

LEGAL PROBLEMS: CONTRACTS RESTRAINING EMPLOYEES FROM ENGAGING IN COMPETITIVE TRADE

By Thomas Conyngton*

Not infrequently when employees are to fill positions involving confidential relations, contact with customers, knowledge of trade secrets and manufacturing processes, it is desired to embody in the contract of employment some restriction on their freedom to enter the service of competitors or to start competitive businesses for themselves, after ending the term for which they are employed. There are, then, some nice distinctions to be made between those restrictions that may be legally imposed and enforced and those that the law will not sustain.

When a business is purchased the buyer often demands that the seller agree not to compete, and in such cases the courts are disposed to go as far as they reasonably can in sustaining the buyer's right. When, however, restraining agreements are entered into between employer and employee, the rule is stricter and such provisions will not be sustained unless there are conditions which obviously justify them.

As a general rule, any contract in restraint of trade whether between buyer and seller or employer and employee must be limited to what is reasonable both as to territory and as to time. Where an ordinary business is bought, a provision that the seller would not go into any competitive business in the same city for five years, would probably be enforced. If the territory were extended or the time were extended, it is doubtful in the case of an ordinary business if the courts would enforce the provisions. If, however, the business sold was nation-wide in its activities, the restriction as to territory might with propriety be equally extended. Thus if Henry Ford should sell his automobile business, the purchaser would with reason want the restriction as to territory to include the whole of the United States and he might also require it to last for a longer period than five years. The courts would recognize such a situation and would uphold the restrictive provisions of the contract so far as necessary to properly protect the purchaser. The tendency, however, is to go no further than is obviously necessary to protect the purchaser in the enjoyment of that which he has purchased, that is, only to enforce fair provisions against unfair competition. Any attempt to go further and limit a seller or an employee unduly may make the restrictions unenforceable.

There are two cases in which an agreement by an employee not to compete with his employer or to engage with a competing establishment will be enforced. The first is where he holds a confidential position and has knowledge of trade secrets, trade processes, and lists of customers; and the second is where his services are "special, unique, and extraordinary."

While restricting contracts that will be upheld by the courts, can be made with employees having peculiar skill or capabilities, or holding confidential positions and acquiring knowledge of secret processes or trade secrets, such contracts are from the practical standpoint difficult of enforcement if the employees desire to evade their restrictions. If an employee is without honor or conscience it would be hard to restrain him by law from secretly selling anything that he knows is capable of being imparted to others.

In a recent case, the James Stores, Inc., employed one Alfred Jones as manager of their clothing department. A written contract was entered into by which Jones was to manage the clothing department of the corporation for the period of one year from

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September 5, 1918, and it was a provision of the agreement that Jones should not for five years thereafter engage with any competing house or take part in any business that would compete with that of the James Stores, Inc.

Jones left his employment in November of the same year. He shortly thereafter secured capital, opened a clothing business in the same city, and of necessity was engaged in competition with the James Stores, Inc. The corporation promptly brought suit to have him enjoined from conducting a competitive business, on the ground that it was in breach of his contract. The defendant's lawyer demurred, i.e., asked the court to decide whether the plaintiff had shown any cause of action that would justify the granting of an injunction.

The court held that the question of enforcing such agreements was a matter of public policy and that in the case of the James Stores, Inc., the enforcement of the restraining clause was against public policy. The general doctrine of the law was broadly stated as follows:

> The public have an interest in every person's carrying on his trade freely; so has the individual. All interference with individual liberty and action in trading and all restraints in trade, of themselves, if there is nothing more, are contrary to public policy and therefore void.

Whether a restraint upon an individual's engaging in competition is reasonable or not in view of all the circumstances, is the test of its validity. In this particular case the abilities of the employee were commonplace. No specialized skill is necessary for the management of a clothing department and no business secrets are involved in such a position, therefore it is held that it is not fair or reasonable that such an employee should be restrained from entering the service of a competitor or from starting a business of his own. This is the general legal rule in such cases, and employers desiring to protect themselves against such competition will find it difficult to get up any agreement that the courts will enforce. When they try and fail it is commonly because, as with the dog in the manger, they attempt too much, or desire the unreasonable and so lose all.

In a case before the Supreme Court of the United States, the court said:

> There are two principal grounds on which the doctrine is founded that a contract in restraint of trade is void as against public policy, one is the injury of the public in being deprived of the restricted party's industry; the other is the injury to the party himself by being precluded from pursuing his occupation and thus being prevented from supporting himself and his family.

In a case in Illinois a laundry employed an agent and made him sign an agreement that he would not, after the term of his employment, solicit from the customers of the employing laundry for himself or for any other competing laundry. After leaving the service of the laundry, the agent engaged with a competing laundry and solicited patronage from the customers of the first laundry. The first laundry brought suit to restrain him, and the court allowed relief and granted a restraining order. In this case, it was not attempted to bar the employee from going into business for himself or from entering the service of a competing laundry. It was only sought to restrain him from solicitation of the actual customers of his original employer, and this restriction the court held was fair and could be enforced.

In a New York case a salesman was employed by a corporation, the Magnolia Company, under contract for three years at $7,000 per annum, to sell Babbitt Metal. It was a confidential position and he necessarily acquired full knowledge of the company's customers, its methods of doing business, etc. His contract of employment contained the following limitation:

> That in the event of his connection with the party of the first part being severed under this agreement, he will not, either directly or indirectly, connect himself with any company or firm engaged in business similar to that of the party of the first part, nor will he himself engage in any business that will compete with the business of the party of the first part, for a period of five years from the date of his connection being so severed.

He resigned, got a former customer to go in with him, organized a company of which he became president, and this company then engaged in a similar business. His

former employer asked for a restraining order. The lower court refused this on the ground that acceptance of the salesman's resignation had abrogated the entire contract.

The higher court held that the acceptance of the resignation had no effect on the agreement except to terminate the employment, and said of the agreement:

> It was entirely proper for the plaintiff to require its employees to agree to it. The defendant voluntarily agreed to it, but has persistently and knowingly violated it, and I can see no reason why he should not be required to fairly and honestly perform it.

In a later New York case, the Eastman Kodak Company brought a suit against a competing company and a former employee, Harry A. Warren, who had knowledge of valuable trade secrets, to restrain both the company and the ex-employee from utilizing Warren's knowledge and services in competing with the Eastman Company.

Warren's contract with the Eastman Company included a provision that for two years after the termination of his employment he would not, in the United States, compete or enter the employ of any competing establishment. This the court held was valid and could be enforced.

To sum up, in any case where the knowledge of the employee must extend to processes, trade secrets, dealings with customers and lists of customers' names, in short, the things that can be used against the particular business, or in competition with it, or where the employee will acquire skill and trade knowledge that are special, unique, or unusual, it is proper to make such employee agree not to use his knowledge and ability against his employer when his term of employment ceases. Such restriction should not, however, extend through all time, nor apply to all places. Such sweeping restrictions prejudice courts and may make the whole agreement void. If an agreement not to compete or to enter the employ of a competing business in the particular city for a period of five years is enough, it should not be made for the whole country and for 25 years. A reasonable restriction will probably be enforced, but the situation is not one where the more sought, the more obtained; on the contrary, the less that is sought, the more likely it is to be secured.

A BONUS AND TAX PROBLEM

By Edward S. Lancaster*

This tax problem may be of interest at a time when many concerns are closing their books at periods shorter than one year.

The solution was evolved to meet a contingency arising in business and one which arises in many businesses and is computed by an arbitrary assumption.

The reader will note that the formula can be used by a person having no knowledge of algebra. I have given the steps in somewhat greater detail than a mathematician might think necessary, that it might be clear to persons like myself whose use of algebra is ten or more years in the past.

Periods shorter than one year should be converted to an annual basis. That is, for a calculation based on a nine months' period, all income items should be increased one third, the invested capital taken at actual figures and the tax and bonus computed as 75% of the results thus obtained.

The problem is to determine the bonus and tax, where a company pays as contingent compensation to certain parties a certain percentage of the annual profit, it being stipulated that certain items of expense properly deductible in figuring federal income and excess profits taxes, shall not be deducted, but that the amount of the federal tax shall be deducted from income before computing the bonus. Said bonus as contingent compensation is of course an expense of the business and is a deduction from income before figuring the federal tax.

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Derivation of formula:
Y = Bonus
X = Federal Tax
b = Bonus Fraction
A = Taxable Income (Bonus not deducted)
B = Bonus Income (Tax not deducted)
V = Invested Capital
S = Specific Exemption (Items 6 and 9)
Reduce all percentages to proper fractions.

$$\text{Excess Profits Tax First Bracket} = \frac{\left[\frac{V}{5} - \frac{2V}{25} - 3000\right]}{5} = \frac{3V - 75{,}000}{125}$$

$$\text{Second Bracket} = \frac{2}{5}\left(A - Y - \frac{V}{5}\right) = \frac{10A - 10Y - 2V}{25}$$

$$\text{Total Excess Profits Tax} = \frac{3V - 75{,}000}{125} + \frac{10A - 10Y - 2V}{25}$$

$$= \frac{50A - 7V - 50Y - 75{,}000}{125}$$

$$\text{Income Tax} = \frac{1}{10}(A - Y - S) - \frac{(50A - 7V - 50Y - 75{,}000)}{125}$$

$$= \frac{75A - 75Y - 125S \div 7V \div 75{,}000}{1250}$$

$$\text{Total Tax} = \frac{50A - 7V - 50Y - 75{,}000}{125} \div \frac{75A - 75Y - 125S \div 7V \div 75{,}000}{1250}$$

$$\text{Total Tax or } X = \frac{575A - 63V - 575Y - 675{,}000 - 125S}{1250}$$

Solution for Bonus or Y:

$$Y = \frac{b}{d}(B - X) = \frac{bB - bX}{d} \text{ or } bX \div dY = bB$$

Substituting for X from the X formula:

$$\frac{b(575A - 63V - 575Y - 675{,}000 - 125S)}{1250} \div dY = bB$$

$$1250\,dY - 575\,bY = 1250\,bB - 575\,Ab \div 63\,bV \div 125\,bS \div 675{,}000b$$

$$Y = \frac{b(1250B - 575A \div 63V \div 125S \div 675{,}000)}{1250d - 575b}$$

Solution of illustrative problem:

$A = \$550{,}000.$ $B = \$600{,}000.$ $\frac{b}{d} = 8\tfrac{1}{2}\% = \frac{17}{200}$

$V = \$1{,}500{,}000.$ $S = \$2000.$

$$\text{Formula for bonus: } Y = \frac{b(1250B - 575A \div 63V \div 125S \div 675{,}000)}{1250d - 575b}$$

Substituting values:

$$Y = \frac{17(750{,}000{,}000 - 316{,}250{,}000 \div 94{,}500{,}000 \div 250{,}000 \div 675{,}000)}{250{,}000 - 9775}$$

$$= \frac{17(529{,}175{,}000)}{240{,}225} \text{ factoring} = \frac{17(21{,}167{,}000)}{9609} = \frac{359{,}839{,}000}{9609}$$

Bonus = $37,468.93

Total Tax or $X = \dfrac{575\,A - 63\,V - 575\,Y - 675{,}000 - 125\,S}{1250}$

Substituting values:

$$X = \frac{575(550{,}000 - 37{,}468.93) - 94{,}500{,}000 - 925{,}000}{1250}$$

$$\text{Factoring} = \frac{23(512{,}531.07) - 3{,}817{,}000}{250} = \frac{7{,}971{,}214.61}{50} = \$159{,}424.29.$$

ACCOUNTING FOR EFFECTIVE INTEREST ON BONDS SOLD

By G. W. Greenwood*

UNDER "Problems for the Business Executive" in *Administration* for July, we find the following example:

An issue of $1,000,000 of bonds is made at 90, carrying interest at 5%, and redeemable at the following rates, $50,000 each half year at 100 for the first five years, and thereafter at 105. Bonds are redeemed as specified, but are purchased on the market as follows:

1st year	92
2nd year	93
3rd year	95
4th year	97
5th year	98
6th year	100
7th year	102
8th year	104
9th year drawn at	105
10th year " "	105

I would like to suggest a different solution from the one in the July issue, to which I take exception.

We begin naturally with a credit to the Estimated Redemption Cost of $1,025,000 which is the liability incurred, charging Cash with the $900,000 received, and charging Bond Discount with the remaining $125,000.

Also, at the close of each period, one charges Estimated Redemption Cost with the standard cost of the bonds bought up and canceled, crediting Profit and Loss with the difference between this estimated cost and the actual cost. The interest paid is also charged to Profit and Loss for the period in which payment is made and the bonds redeemed. The remaining question is the equitable distribution over the twenty periods of the Bond Discount amounting to $125,000. In the solution above referred to, this discount is simply prorated over the ten periods in proportion to the amount of interest accruing during each period.

For example, multiplying the interest accruing during the first period, $25,000, by the sum of the interest and cash discount, $387,500, and dividing by the total interest, $262,500, we get $36,904.76.

According to this plan, all one needs to do is to increase each interest charge a sufficient amount to take care of the discount, all increases bearing the same ratio to the corresponding amounts of interest. Incidentally, this also disposes of the discrepancy of 40 cents occurring in the solution proffered.

But we are told that the effective interest rate is .0820106 per annum. According to my computation, the effective rate is .07827245 per annum, or .039136225 semi-annually. Starting with the cash received for the bonds, let us translate the problem thus:

A man borrows $900,000. He makes payments every six months as follows: $75,000, $73,750, $72,500, $71,250, $70,000, $68,750, $67,500, $66,250, $65,000, $63,750, $65,000, $63,750, $62,500, $61,250, $60,000, $58,750, $57,500, $56,250, $55,000, $53,750.

It was found that the last of the 20 semi-annual payments just canceled his original

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indebtedness of $900,000. Find the rate of semiannual interest he was paying.

Using the suggested rate of .039136225, consider the following calculation:

Original amount	$900,000.00
Interest for six months	35,222.60
First payment	75,000.00
Present worth at the end of six months	860,222.60
Interest for six months	33,665.87
Second payment	73,750.00
Present worth at the end of one year	820,138.47

Present worth at the end of five years	$486,878.84
Interest for six months	19,054.60
Eleventh payment	65,000.00
Present worth at the end of five years and six months	440,933.44

Present worth at the end of nine years and six months	$51,725.62
Interest for six months	2,024.35
Twentieth and final payment	53,750.00

There is a discrepancy of three cents, which is of course negligible when compared with any interest payment.

The entries at the close of any period would consist of charging the Estimated Redemption Cost with the estimated cost of the bonds redeemed, charging Interest with the amount shown in the computation, crediting Cash with the actual cost of the bonds redeemed and with the interest paid, Profit and Loss for the difference between the estimated cost and the actual cost of bonds redeemed, and Bond Discount with the difference between the interest charged for the period and the interest paid, as given below.

It will be seen that the difference between the Estimated Redemption Cost and the Discount as shown by the books at the close of any period will agree with the present worth of the outstanding bonds as obtained by the above computation.

I believe it would be difficult to show to a bank purchasing the original issue of bonds for $900,000 and holding them for redemption according to the original plan, that it would be getting interest at the rate of .0410053, semiannually; it would receive interest at the rate of .039136225 semiannually, and if it should dispose of the remaining bonds at the close of any interest period for the present worth as above shown, it would receive interest at this rate up to that point, and the purchaser would likewise receive interest at this same rate on his initial investment.

First Period

Estimated Redemption Cost	$50,000.00	
Interest	35,222.60	
To Cash (Bonds)		$46,000.00
Profit and Loss		4,000.00
Cash (Interest)		25,000.00
Discount		10,222.60

Eleventh Period

Estimated Redemption Cost	$52,500.00	
Interest	19,054.60	
To Cash (Bonds)		$50,000.00
Profit and Loss		2,500.00
Cash (Interest)		12,500.00
Discount		6,554.60

REVIEWS OF BUSINESS BOOKS

WAR-TIME STRIKES AND THEIR ADJUSTMENT

By Alexander M. Bing, Introduction by Felix Adler. xi, 328 pp. E. P. Dutton and Company

Reviewed by Harry W. Kimball*

The title of this book might well have been, "The Wars behind the War," for the reading of its pages does not create the impression that, during the war period, patriotic motives played a large part in the activities of either employers or employees.

Many employers stole labor wherever they could find it, and did not hesitate to take extreme profits from the government. They bid against each other in wages and in overtime, and unscrupulously disregarded the wishes and even the express commands of government officials. The workers went when and where they wished, following the lure of the highest wage or the largest amount of overtime, without a thought for the needs of the government. They slacked on their jobs and were inefficient, and often took unfair advantage of the fact that almost any sort of demands could be enforced when men were scarce.

Mr. Bing says:

> The patriotic motive, although genuine and potent, was not of itself sufficiently strong to overcome the many adverse conditions making for severe industrial conflicts. It was a real element in the situation but never a determining one, and in the first year of our participation in the war there occurred an even larger number of strikes than in the record year of 1916.

The author, an employer of labor of large business experience, gave his services to the government during the war and took an active part in the settlement of many labor disputes. Two qualities seem to shine out: painstaking accuracy and deep sympathy with the human factor in industry.

Part of "War-Time Strikes and Their Adjustment" traces the development and acts of the War Labor Boards, from the first Cantonment Adjustment Commission to the final decisions of the National War Labor Board. For the first time in its history the United States Government through these boards and commissions entered into agreement with labor unions. In order to get results in nearly every instance the demands of the workers were acceded to. So severe was the necessity for uninterrupted production and transportation, that, rather than risk the stoppage of mills, shops, and railroads, the workers were given what they asked for.

Mr. Bing points out that on the whole these demands were not unreasonable. They consisted of:

> A wage increasing with the cost of living.
> The basic eight-hour day.
> The right of collective bargaining.

Mr. Bing, however, does not stress sufficiently the ill effects on the minds of the workers of having practically every demand granted. Although most of the wishes of the workers were just, the ease with which they were secured gave to the masses very false ideas of their power and of their rights. One of the most far-reaching policies of the government wage boards was their attempt to standardize wages throughout the country.

In this effort to produce greater stability in the labor force, they were almost everywhere resisted by the employers.

> In considering the opposition of employers to the removal of differentials between individuals we are brought face to face with a most difficult

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problem. Employers have found that their best means of obtaining both skill and industry has been by rewarding those qualities with higher wages. The unions, on the other hand, have realized that collective bargaining becomes more and more difficult as attempts are made to recognize individual variations in ability. The union derives a large part of its numerical strength by reason of the fact that it is a protection for the man of average ability, rather than the exceptionally skilled.

The gravest industrial troubles of the war time period occurred over the efforts of the government boards to force dealings with the unions, and in their insistence that collective bargaining should be adopted. Yet the present interest in shop committees, which tend to produce factory rather than class solidarity, can be traced to the activities of government agencies along this line. Many of the employers, however, never became reconciled to the employees' immunity from discharge (because of union membership) which was one of the cardinal principles of the National War Labor Board. Indeed the position taken with great unanimity by all the labor adjustment boards was that capital has no right to interfere with working men organizing labor, any more than the working man has a right to interfere with capitalists organizing capital. This feature of the government's war labor program—the granting to the workers of the right to organize into trades unions—was the one big concession made to labor by the employers, and indeed many of the largest of them never became completely reconciled to it.

The importance of the Government's recognition of the right can be appreciated when we recall the fact that the employers' denial of this right has been one of the chief causes of industrial unrest. In spite of the fact that discrimination of this kind was forbidden, during the war, by government policy the workers constantly complained that it was nevertheless being continued. Nor can there be any question that in many instances the workers' complaints were justified by the facts. This persistence in the practise of discriminating against the members of the unions constituted the most serious violation of the Government's war principles by employers, just as the persistent calling of strikes by the workers constituted their most serious violation.

A most valuable and a rather startling feature of "War-Time Strikes and Their Adjustment" is a series of charts showing the trend of money wages and real wages as compared with the cost of living from December 1914 to December 1919. These graphs reveal that the average increase in real wages during the war period was less than 10 per cent. The highest percentage of increase in real wages occurred in the shipyards where it reached 60 per cent in 1917, and in December 1919 stood at 40 per cent. But despite various increases in money wages such representative industries as the railroads, the navy yards, the metal trades, the building trades, and the printing trades showed an actual decrease in real wages as compared with the prewar period. The greatest loss was in the printing trades where the real wage was 30 per cent lower in December 1910 than in December 1914.

The general impression of excessive wages during the war period is almost entirely due to the abuse of overtime. In this way weekly earnings were increased by amounts varying from 40 to 100 per cent. Men soldiered on the job by day that they might work overtime by night. It was not uncommon for men to get in from 70 to 80 hours of work in a week, and every hour above 48 was paid for at the rate of time and one-half, and in many instances double time was given for all overtime service.

The attitude of the employers with which the writer of this book is in closest sympathy is the universal condemnation of the workers' inefficiency. He admits, what every industrial manager knows all too well, that there was an inexcusable slacking on the part of the men. Hundreds of thousands of workers laid down on their jobs and did just as little work as they could "get away with." This form of sabotage was one of the most injurious effects of the power which the workers felt they had.

Some of the more important judgments and conclusions of the author are these:

The adage that extremes provoke extremes is well illustrated by our labor experience. In places where the employers were most reactionary, the most aggressive and radical leadership

was to be found. This was true of Arizona mines and Northwest lumber camps as well as of cities like Chicago, Bridgeport, and Newark, where an excessive conservatism on the part of the employers was as is often the case accompanied by labor leadership of the most fiery and extreme kind.

Many employers are under the impression that the Government truckled to labor during the war, and gave it everything it asked. A more careful study, of just what labor did receive, has confirmed and strengthened the opinion, formed by the writer during the war, that this was not in any sense the case and that the government did not, except in isolated instances, give to labor any concessions which were not demanded both by justice and expediency.

The difficulties which industry experienced in meeting the needs of the war and of the post-armistice period were the result of pre-war difficulties rather than new ones created by the war emergency. Irritations caused by war conditions were added to previous bad industrial relations, and as a result former difficulties were intensified.

Unless the industrial development of America is to be greatly different from that of every other industrial country the unions will continue to grow in numbers and in power. An attitude of irreconcilable hostility by big business interests runs contrary to the processes of social evolution.

The essential need is the development, by both employer and employee, of a new conception of efficiency and a new ideal of service. Industry in the past has been conducted by both sides without sentiment and to a great extent without ideals. Fortunately the idea of service is beginning to take its place in the new conception of industry. Some employers are endeavoring to give their workers a larger share of control. Some of the workers also see that if they are to share in this control they too must develop a new conception of co-operative efficiency.

Mr. Bing's bias as a so-called capitalist might be expected to incline towards the group to which he belongs. On the contrary nothing is more apparent than his eager desire to be absolutely just in presenting the case of labor. It is exceedingly difficult to be just. The author has scrupulously endeavored to be so. His book, therefore, is one to be commended to business executives.

BETTER BUSINESS LETTERS

By John M. Manly, Head of the Department of English, The University of Chicago, and John A. Powell, The Holtzer-Cabot Electric Company. 167 pp. Frederick J. Drake & Company

Reviewed by Edward Jones Kilduff *

One of the largest banks in New York City has recently estimated that its officers handle by letter 10 business matters for every one handled in a personal conference with the customer. No wonder that this bank is today striving to develop the quality of its letters. Many other business concerns have also realized that a similar state of affairs exists with them and are likewise devoting efforts to the raising of the standard of their letters to customers.

One of the most recent contributions on the subject of better letters or business English is a volume entitled "Better Business Letters" written by John M. Manly, Head of the Department of English, of the University of Chicago, and John A. Powell, of The Holtzer-Cabot Electric Company of Chicago. Professor Manly is well known for his various works on English.

In the preface of this book, the authors state:

> This book is designed, not as a textbook on the subject of business letters, but as a practical aid to the man who is trying to train himself to break away from the stiff and commonplace office letter that is "natural" to him only because it has become habitual. It is designed to serve him as a manual for desk use, to which he can turn, at the moment of dictation, for a suggestion or a rule applicable to the class of letter he is about to write.

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The book presents the essential ideas concerning such types of letters as sales letters, follow-up letters, complaint and collection letters, in a suggestive rather than in an exhaustive manner. In fact, the chief criticism of the reviewer is that the authors did decide to make use of the suggestive treatment. The information they give only whets one's desire for more.

The material presented is sound and sensible, and should, therefore, make this book a desirable addition to the office library. In the plant library it could be read with profit by foremen.

BETTER ADVERTISING

By John M. Manly, Head of the Department of English at the University of Chicago, and John A. Powell of the Holtzer-Cabot Electrical Company, Chicago. 157 pp. Frederick J. Drake and Company

Reviewed by Harry Franklin Harrington *

This volume is the third member in the family of Better Business Books. The first on letter writing, the second on English, may, perhaps, have prepared the way for the one now in the reviewer's hands, "Better Advertising," for certainly it may be considered as the apex of practical composition in which all the arts of the writer are employed to win a buying public. As a treatise it is brief and compact; but it is a treasure-house of wise counsel.

The authors emphasize in cogent style that advertising is sales talk reduced to type and that the writer of good advertising copy must acquire systematically the facts and principles of human thought as related to buying and selling.

Direct advertising, good-will, publicity or institutional advertising, are considered by the authors. The bulk of the book is concerned with the discussion of principles underlying the making of successful advertising copy. The analysis of the product and the market for it, is stressed as of primary importance. Unless a copy-writer has knowledge of the goods he wishes to proclaim his talk is unconvincing jargon.

Charts for the preliminary analysis of advertising problems are included in the volume. These may be followed with ease and profit, in connection with a list of "the related human instincts to which ordinary advertising is likely at any time to find it necessary to address itself." (Page 41). The classification is a useful one.

In the judgment of the authors—and in this all thoughtful advertising men will agree—writing copy on the "hit-or-miss" principle, without first determining *what* one ought to say, *why* it should be said, and *how* to say it, is exceedingly wasteful of advertising revenues. The book convinces one of the uselessness and ineffectiveness of copy struck off in haphazard fashion, without fitting into a plan and without a foundation in the facts that underlie the product. Mere generalities, the authors aver, carry little or no weight in the mind of the reader, and are, therefore, valueless in the effort to awaken desire or stimulate action.

The literary style of the copy and its ability to "pall" business, the "reason-why" and the "human-interest" qualities of well-written advertising are clearly considered, and many excellent suggestions made on contriving the best approach to the customer's mind and pocket-book. The part played by the illustration, the slogan, the trade-mark, the headline, the "clincher," and different forms of commercial literature, are briefly but effectively explained.

The book is adequately illustrated by good and questionable examples of advertisements, which are analyzed for the reader.

The authors of "Better Advertising"

* Director of the Joseph Medill School of Journalism, Northwestern University, Chicago, Ill.

offer a practical specimen of the art they commend as necessary to the equipment of the successful advertising man, namely, a command of clear, direct English. The words are telling and simple; the figures and illustrations are apt and, for the most part, convincing. There is not a line of "purple rhetoric" in the entire book. Thoughtfulness, the blending of the practical with the theoretical, and the keen insight into the specific problems of advertising characterize this slender handbook. It is a worthy companion of the other two volumes, doubtless to be reviewed by others, rounding out the discussion of the functional quality of written speech.

ACCEPTANCES, TRADE AND BANKERS'

By Park Mathewson. xiii, 372 pp. D. Appleton and Company

Reviewed by C. T. Murchison*

Frankly, the book under review is a propaganda book. But it is propaganda for a good purpose. The desirability of a wider use of the acceptance in the United States in the interest both of better banking and of better business has long been recognized by the more progressive elements in our financial and commercial population. But like so many other labor-saving and safety-promoting expedients it has had an almost heart-breaking task to overcome the inertia of policies and practices which are grounded in hoary tradition. That is why Mr. Mathewson has made his book a propaganda book. It is designed to promote the use of acceptances by offering ways and means of fighting business inertia.

It may be that Mr. Mathewson has made his book too narrow. In the endeavor to deliver a well-defined and clean-cut impulse to the acceptance movement, he has laid himself open to the charge of having taken too much for granted. For example, he takes it for granted that readers of his work will be predisposed to approval of the general theories of the acceptance, and that therefore the real task in hand is not to convert but to agitate. In other words, his attitude seems to be: Why waste time talking about theory, let's get action.

The book, therefore, will have its greatest value for the man who is already more or less convinced of the desirability of adopting the acceptance in his business, but who is hesitating and doubtful as to the manner of its practical application. Also, the individual who is already an enthusiast on acceptances will find the book a most excellent aid in the work of imparting his ideas and enthusiasm to others. The acceptance campaigner who has equipped himself with the armor furnished by Mr. Mathewson will not be wanting an effective weapon with which to meet any ordinary entanglement or counter-attack.

However, and here we find the book's greatest weakness, the treatment is not of such a nature as to carry conviction to the heart of a person who is skeptical to begin with, or who is uninformed on the subject and insists upon an unbiased presentation of both sides of the question before making up his mind. Mr. Mathewson's bias is an honest bias. He is too frank and too firmly convinced that he is unqualifiedly right to try to appear otherwise. A most commendable attitude in many respects, but one which will invariably leave a certain number of hearers or readers with the feeling that there still remains much which has been unsaid.

Mr. Mathewson's treatment of the history of the acceptance is too brief to be satisfying. His explanation of the backwardness of America in its use is anything but adequate. The greater popularity of the acceptance in foreign countries is touched upon, together with the procedure

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followed in its use, but here too the treatment is decidedly sketchy. Statistical evidence to indicate the extent of the use of the acceptance, both trade and bankers', the degree of its importance as compared with other types of credit device, the rate of progress being achieved in its establishment, and the variations in its use and efficiency to be found in the various industries, trades, and occupations, is unfortunately very limited.

But as a work which is concerned with the purely practical aspects of the acceptance from the point of view of the individual business man, the book well deserves the careful attention of those interested in the progress of commercial methods. In the preface, the author describes the content as follows: "There will be found herein a full discussion of the practical scope and limits of bankers' and trade acceptances and . . . their most approved methods of use."

The book is divided into three parts. Part I has to do with "Acceptance theory, procedure, and practice." Herein we find chapters on "How to instal trade acceptances in a wholesale business;" "Satisfactory methods of recording trade acceptances, and checking results;" "Sound accounting methods for handling trade acceptances by seller and buyer;" "The trade acceptance and the retail merchant;" "Should inducements be given to buyers to accept?" and "Bankers' acceptance methods and forms of leading banking institutions."

Part II is made up of a compilation and discussion of the rulings of the Federal Reserve Board bearing upon acceptances. It also contains a chapter which presents in a very comprehensive way the opinions of the counsel of the Federal Reserve Board. This division constitutes the most valuable part of the book for those primarily interested in the technical and legal aspects of the acceptance from the banker's point of view.

Part III is devoted to "Data for trade acceptance campaigns." And it is literally campaign material. Arguments are amassed to show the advantages of acceptances from the viewpoints of the manufacturer, the wholesaler, the retailer, the ultimate consumer, and the business man in general. But little attempt is made to differentiate the good arguments from the bad. All are thrown in with approximately equal weight and emphasis. This does not constitute a negative criticism, however, if we regard the book only in the light of the purpose for which it was written.

The author, himself, in the prelude to Part III cautions the reader that the treatment is necessarily from a "positive" standpoint, and designed "to impress the class to whom it is addressed." "It will be well, therefore," he says, "to read these chapters with this in mind rather than to consider them as an unprejudiced analysis of the subject."

After such a warning the reader, of course, is prepared for what comes, but the reviewer can't help wondering if there will be some resentment forthcoming from the class to be impressed. To be informed that they are a class whose appropriate reading matter is of the sort demanding an attitude of indulgent charity from outsiders, must be anything but comforting.

Nevertheless, Mr. Mathewson does appreciate the importance of being "politic" in the campaign for the acceptance. He advises sellers not to force the practice upon buyers:

> By giving the customer the choice and making it attractive he will probably be more apt to "accept," than if he feels the seller desires to force on him new and possibly unattractive terms. If the buyer is able to do without the seller's goods, then it is not advantageous and, sometimes, impossible to insist upon trade acceptance terms. However, proper letters and explanations by salesmen may enable the seller to collect by trade acceptances, even though the buyer is at first averse to them and the sellers' competitors do not use them.

Mr. Mathewson supplements this very wise advice by presenting model letters and ready-made explanations which upon slight alteration to fit particular cases may be used by sellers in their pressure upon buyers. He also warns against the offering of extravagant inducements to the use of the acceptance, and mentions the specific terms beyond which it would not be wise to go.

The various forms of acceptances are described and illustrated, and valuable sug-

gestions made as to the advantages of each. Sellers are informed how to keep their acceptance records; the necessary accounting readjustments are carefully pointed out; such important details as dating, maturity, place of payment, are well covered; and last, but far from least, the whole procedure and machinery of acceptance discounting is clearly portrayed. The author does well to emphasize the facilities offered by the federal reserve system, as well as by the other institutions, including the commercial paper houses, and note brokers.

Bankers' acceptances as distinct from trade acceptances receive a relatively small amount of attention, only three chapters of the total of 26 being devoted exclusively to them. Yet "at this time the bankers' acceptances total to many times the aggregate of the trade acceptances discounted, accepted, or current in this country."

The author sees as the main distinction between the two types of acceptances the following:

> A trade acceptance can cover only domestic merchandise sales, while bankers' acceptances can cover such dealings whether they were originated or concluded in this or a foreign country, as well as merchandise in warehouse or transit and not sold to or accepted by a buyer, besides other legitimate business transactions.

From another point of view he states that:

> . . . the fundamental difference is that the bankers' acceptance must be accepted by a "bank or trust company, or a firm, person, company, or corporation engaged in the business of granting bankers' acceptance credits," while a trade acceptance may be accepted by any "company, firm, corporation, or person upon whom it is drawn."

All the types of acceptances taken together should, in the opinion of the author:

> . . . put the finance of American credit business on an impregnable basis. This would only require that the business man use the foundation laid by the financial mind to its full capacity, in order to build up an edifice of domestic and foreign trade of almost inconceivable proportions, an achievement which would probably have been impossible without the addition to our other forms of paper of both the bankers' and trade acceptances.

INDUSTRIAL GOVERNMENT

By John R. Commons, and Other Members of the Department of Economics, University of Wisconsin, Madison, Wis. xii, 425 pp. The Macmillan Company

REVIEWED BY JAMES M. LEE*

John R. Commons contributed, a few months ago, an article to this magazine on the topic, "A Cross Section of Industrial Control."[1] This contribution by Professor Commons practically amounts to a resumé of "Industrial Government." The present review, therefore, is simply to supplement that article.

The history of the preparation of the book is somewhat interesting. Four Wisconsin manufacturers, for various reasons, wanted to know the best practice in dealing with labor that America afforded. They accordingly financed the traveling expenses for a group of investigators selected from the Department of Economics at the University of Wisconsin. These investigators, as was pointed out in Professor Commons' article in *Administration*, visited some thirty industrial plants situated from Wisconsin to Maine. The detailed result of their investigation is now presented in book form.

The work is divided into two parts. One describes the trips to 18 of the 30 plants visited; the other presents conclusions reached, based upon the investigations made not only in the visits to the 18 establishments, but also in those to the

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[1] See *Administration* for February, 1921, p. 145.

other plants. Because labor conditions are so uncertain, the word "conclusions" is explained to mean inferences.

The plant first mentioned in the book is that of The White Motor Company at Cleveland, Ohio. The policy of this company is stated to be a limit of 8 per cent in the payment of dividends on the capital stock. It is interesting to note that this company has no system of bonuses, premiums, or piece rates, but continues on a straight day wage. There are neither time nor motion studies to induce individuals to increase their output.

The following question is asked:

> To sum it all up, what are the White Motor's substitutes for the motion studies, piece work, profit sharing and all the other scientific methods of appealing to the individual for increased product?

This question is answered by asking another which is quoted in the following paragraph:

> Isn't it something like this? Thinking and planning for the future. Keeping the mind of every man away from whatever there is of dullness and monotony in his task. Just touching the imagination; arousing in every heart zeal for progress and pride in a great common enterprise; lighting up the most menial and stupefying task with the rays of a great industrial vision.

Details are given as follows:

> The White Motor Management does it by the policy of honesty and openness. It furnishes copies of its annual report to all employees requesting it, and sets forth in the White-Book the essential facts contained in the report. The White-Book is sent every month into the homes of every employee and it forces information about itself not only on the men but also on their wives and families. It shows what they have to fear and what they have to hope, and then promises to keep faith with them in sharing prosperity with them.

Because of the title of the book, it should be mentioned in passing that the Shop Committee of The White Motor Company was started neither as a grievance committee nor as a legislative body. The company, in fact, has never attempted to give employees any degree of industrial government. The object of the shop committee was something quite different. It was that some day employees might assume a greater or less degree of self-government. This fact is emphasized by the assertion that while The White Motor has an open-shop policy, the unions have never interfered in the question of wages.

In striking contrast to the belief of many executives, The White Motor Company, according to its officials, thinks that time rather than piece rates proves the cheapest in the long run. These officials assert that it is more economical to employ a young man and keep him until he grows old than to wear out an employee or lose him when he is still young. The word "him" is used literally, for preference is given to married men and returned soldiers, and while much of the work could be performed by women, it is the intention of the company to employ men only.

Two inferences about The White Motor Company may well be taken from Part II of the volume. The first deals with the motive which is the handle by which employees may be guided. In the case of The White Company, it is the motive of hope expressed as follows:

> The management lays before them its plans for a coming year and even a period of years. It reveals past costs and profits as well as contemplated future costs and profits. It shows the relation between capital, production, and wages. The charts shown to the workers indicate a proportionate increase of wages with a mounting of production. The workers are helped to visualize the future, are given hope for increased income both as to amount and certainty—and they rise to their opportunity. Hope unlocks initiative, it spurs the worker on of his own volition, taps unsuspected strata of energy and devotion.

The second inference relates to morale and is expressed as follows:

> Without making any pretense of democracy and without recourse to any unique device or method, on a straight unmodified day rate, they have developed a remarkable shop morale. This they have done almost entirely by keeping their eye intently on their business and designing the entire machinery of their labor management to accomplish their one avowed purpose—the ultimate survival of The White Motor Company. To this fundamental purpose they give the widest publicity among their employees. Thus they have created a community of interest in the

business itself that arises out of the practical self-interest of each. The management is interested in survival and financial returns; so are the workers. In such a situation data collecting, record keeping, and report making are of as great concern to the workers as to the employer. The investors of capital and the investors of labor alike look to those charged with their company's management for the essential facts—they want them to be accurate, adequate, immediate, and simple.

The second chapter describes "The industrial miracle of the age"—a phrase used by John D. Rockefeller about the Ford Motor Company. This industrial miracle which follows the psychological miracle is well indicated by the following quotation:

Innumerable trolleys, conveyor belts, tractors, and trailers, carrying multitudes of castings to appointed foregatherings with other castings and parts. Waist-high assembly carriers do away with lifting and bending. In the foundry, usually the bugbear of employment managers, endless chains, overhead trolleys, sustain the weight of ladles; sand-hoppers in the ceiling do away with back-breaking shoveling; electric and magnetic hoists "hustle the pigs." In the cylinder-casting department three men pour what scarce yesterday required a hundred.

The Ford scheme of industrial government is described as having nothing of unionism, shop committees, or collective bargaining, but is just old-fashioned industrial autocracy tempered by faith in human nature.

By way of illustration, the following may be given:

That is why even men with a prison record have done big things at Ford's. There are 400 of them and the majority making good.

Two thousand men go around with labels, "For light work only." A blind man does the work of three men. The fact is, everybody turns in and protects Ford against himself. He is positively too democratic for this world. One man is just as good as another, he thinks. That certainly is not business. But behold, you see ordinary, common men doing big things at Ford's.

Of course, they make mistakes. Ford took his sociologists out of the ranks, and they certainly did raw work for a while. Ford somewhere had gotten an idea that what he wanted as workers in his factory were men who were living clean, wholesome, and constructive lives. So he did not care to have employees examined as to their efficiency—efficiency was to be a by-product of the clean and wholesome life. He was going to share his profits, not with those who got out the work, but with those who led a clean wholesome life. So he picked out his sociologists from the ranks to investigate and find out. And they went into the homes, investigating and reinvestigating everybody. They had an idea that that was the clean, wholesome, and constructive life.

Well, after about three years, Ford called in Dr. Marquis, Dean of the Episcopal Cathedral, and spoke in this wise: "There is too much of this snooping around in private affairs. We'll change this from a Sociology Department to an Education Department—you take charge. You know what I want—clean and constructive life—but cut out these investigations, all except those that really need further assistance and advice."

Chapter III deals with a visit to The Link-Belt Company of Philadelphia which operates as an open shop but which makes no distinction between union and non-union men. On the question of unionism the following is given:

The management here takes the position that men cannot at all times be loyal to both their employers and their union, and in the past has put it up to the men on just this basis. A group of workers came and expressed the desire to organize.

"Why?" asked the management. Well, the men did not exactly know, but they thought they wanted a union.

"Suppose the union officials out of town order you to strike, even though you have no grievance against this management? What would you do?" asked the manager.

The men protested that they would stick to the company.

"And be disloyal to your union?" said the manager. "If you are disloyal to your union, how can we be sure you will not be disloyal to us? Be union men, if you must, but you are through here." The men were surprised, but saw the point. The matter was dropped.

Interesting, but not especially valuable, is the description of how a whirlwind of a Sunday school superintendent became the superintendent of this factory.

Chapter IV, which takes up the Joseph and Feiss plant at Cleveland, Ohio, is really a study of bonuses in dramatized form. First of all, there is a "production bonus" for those who meet the standard set by the

company. Second, there is a "quality bonus" regulated by the maximum number of rejections allowed to the worker. An "attendance bonus" is said to promote regularity and helps to keep the production machinery balanced. For each unbroken consecutive day of work the worker gets this bonus of 50 cents. For each absence this bonus is deducted from the pay of the following day. Still another bonus is the "service bonus." For each year of service an employee gets a bonus of 5 cents per day up to 30 years of service. Beyond that time the bonus does not increase although the payment continues. This last bonus, however, is not to be wasted, and the company reserves the right to deposit it, but agrees to turn over the bank book when employees leave the service of the company.

But there is still another, although unnamed, bonus. If an employee decides to leave, wages up to the minute of departure can be secured, but if notice of this intention is given a bonus of one day's pay is added for each week of notice up to six weeks. Such a notice of six weeks would amount to an extra week of pay.

Those who read the contribution of Henry S. Dennison in this issue of *Administration* will doubtless be doubly interested in Chapter VI. This one describes the Dennison plant at Framingham, Massachusetts. The original of this plant can be found when the great grandfather of the Dennison family began 75 years ago to make paper boxes in his kitchen where a knife, a pair of scissors, a pot of paste, and a slab of wood were his factory.

This chapter is a story of the passing of what later became the death of absentee ownership.

How the trick was turned by the Dennison workers is described as follows:

> Induce the absentees to turn over their common stock with voting power to the imaginative workers and accept preferred stock without voting power. Clever enough. But the imaginative workers had to pay. They paid $4,500,000 in preferred stock at 8 per cent—a permanent charge on the business of $360,000 a year, where the dividends on the common stock had been running something like $200,000 to $250,000.
>
> The preferred stock is doubly secure. If the workers fail to pay that full $360,000 a year for a period of four years, then the preferred stock automatically gets back its voting power and the absentee owners step into control. The preferred stockholders are virtually bondholders but are saved the trouble of legal foreclosure if interest is defaulted.
>
> Now about the common stock. They call it "industrial partnership stock." Where does it come from? By March, 1913, 15,122 shares had been issued to the 167 principal employees. The issue amounted to about one-third of the total salary-roll of the principal employees. Thirty-three and one-third per cent profit for imagination!

It should be noticed in this connection that an industrial partner cannot sell, give, or take away his industrial partnership stock. If he leaves, the Dennison company may pay immediately for his stock either at par or cash value or by the issuance of a second preferred stock of equal face value which can be sold, but which has *no voting power*.

Readers of the Dennison chapter will doubtless regret that more mention was not made of the $100,000 set aside as a starter for "unemployment insurance."

The chapter devoted to The Packard Piano Company is one of the shortest in the volume—possibly because the practices of that company have been so much discussed in the public press as one of the best types of a plant where industrial democracy rules.

Of the economy dividend paid by The Packard Piano Company, this chapter says:

> The dividend is paid the first pay-day in the following month. Every day the bulletin board announces the number of pianos for the day before and the number up to that day for the month. This bulletin board is the focus of every eager eye in the factory. It tells them whether they are approaching or losing that co-operative economy dividend. Individually they are paid piece rates. Collectively they get this added collective piece rate.

No business motto has probably been quoted more frequently than that of The Packard Piano Company: "If there is no harmony in the factory, there will be none in the piano."

In Chapter IX the reader will find an interesting result of one test of industrial democracy. During the summer of 1918, The International Ladies' Garment Workers established their unions in many factories

in Cleveland and attempted to organize the employees of The Printz-Biederman Company.

Walking delegates asked employees of this company detailed questions about bonuses and their wages. When the wage rate was mentioned, these organizers would always use by way of comparison the rates paid in New York City. They secured among employees a few sympathizers who went to the management with the figures.

Attention was called by way of an answer to how the company by careful planning had provided steady employment the year round, and to how the high wages obtained in New York were paid only for the rush seasons. A comparison of the annual wages showed that the workers in Cleveland were earning more than those in New York.

The "industrial democracy" refused to sanction a strike, but when one was called a few employees went out.

The so-called strike did not amount to much, but the company later discharged one of these sympathizers with the union. Union leaders then took this dismissal before the War Labor Board and brought charges of discrimination against trade-unionists.

The company might have lost the case had not a delegation of employees defended the dismissal before the Board on the ground of disloyalty to the existing organization in the shop. These employees informed the Board that they now had the kind of organization that the majority of them wanted and that they had the same right to expect loyalty to their organization that the union had to exact it from its members. The success of the company in avoiding being brought under the award of The Labor Board was thus due to the activity of its loyal employees.

The bonus system, according to this chapter, was denounced by the union as a device of the owners to speed up employees for the sake of profits with the result of premature old age and shortened lives for the workers. A physiologist from Johns Hopkins University, engaged to make an investigation on this question, did not sustain the charge that the bonus system was injuring the health or shortening the lives of employees.

The Printz-Biederman plant is mentioned in Part II as one of the establishments where control boards show the progress of work from one stage to another. In this respect it is similar to the Joseph and Feiss plant, of which mention has already been made in this review.

A paragraph in Part II may be quoted at this point to give a resumé of Chapter XI which deals with The Nunn, Bush and Weldon Shoe Company of Milwaukee.

This paragraph states in Part II:

> This concern (Nunn, Bush and Weldon Shoe Company) has deliberately placed the responsibility for the conduct of its employees in their own hands. It has gone so far as to delegate to them the power of fixing wages and hours of work and the right to discharge. And the significant thing is that the employees, instead of running wild with the authority given them, have actually sobered. They look upon themselves as business men interested in the welfare of the concern which employs them, being careful not to go so far in their demands that the concern is unable to compete effectively with other manufacturers of shoes.

Chapter XII discusses "Profit Sharing that Failed" at The Wayne Knitting Mills of Fort Wayne, Indiana. At least this chapter is entitled "Profit Sharing that Failed," but when the reader reaches the end of the chapter he has his doubts whether it was profit sharing or unionism that failed.

The Wayne Knitting Mills had old-age pensions, sick and accident insurance, and all sorts of welfare work, including profit-sharing checks. Everything seemed to be going nicely until the union committee insisted that the profit-sharing bonus should be in the weekly pay envelope instead of being paid at the end of the year.

In October 1920, the company found its inventory depreciated approximately 40 per cent. The president of the company proposed that the last advance in regular wages be removed and that profit-sharing bonuses be paid only if earned at the end of the year.

The Committee of the union, after seeking advice from headquarters at Philadelphia, reported: "No wage reductions is the motto of our union."

On December 1, the employees walked

out; the union had laid itself off. This strike accounts for the change in system of government.

Space does not permit outlining the results of the visits to the other plants mentioned in the book. Quotations, however, have been sufficiently liberal to indicate not only the subject matter, but also the mode of treatment followed by the authors. Among the other plants to which chapters are devoted are The Milwaukee Electric Railway and Light Company of Milwaukee, The Plimpton Press of Norwood, Massachusetts, The Hart, Schaffner and Marx Company of Chicago, The Huebner Brewing Company of Toledo, Ohio, etc.

II

Part II of the book, as has been mentioned, is devoted to inferences, or what would ordinarily be called conclusions, of this industrial survey. Its first chapter, by John R. Commons himself, deals with the opportunity of management. The concluding paragraph of Professor Commons' contribution to *Administration* may be said to give the final result of the survey:

Capitalism can cure itself, for it is not the blind force that socialists supposed and not the helpless plaything of demand and supply, but it is Management. And the greatest self-cure that it needs today is security of the job, for it is the insecurity of jobs that is the breeder of socialism, of anarchism, of the restrictions of trade-unionism, and a menace to capitalism, to the nation, and even to civilization. Our investigations show beginnings in this self-cure of capitalism.

The next chapter of Part II is entitled "Principles of Management" and is from the pen of Alfred P. Haake. According to its author, the rôle of management includes the following:

1. The selection of the idea.
2. The determination of the feasibility of the idea.
3. The selection of factors necessary to effect the idea.
4. The combination of these non-automatic factors into a well-proportioned organic unit, the business.
5. The securing of the active and continued co-operation of these non-automatic factors.

Mr. Haake suggests the following ways of how management may free itself of the domination of absentee-owned capital and how it may assume the dictatorship of industry:

1. Provide its own funds for the financial responsibility of the going concern; it assumes in part a capitalistic function.
2. Encourage labor to save and invest its funds in industry thereby either playing labor-owned capital off against investment-owned capital and controlling through a balance of power, or going so far as to substitute control by labor-owned capital for control by investment owned capital.
3. To make itself more nearly indispensable in production than any other of the factors, and thus have both capital and labor compete for the guidance of management rather than the converse.
4. To coerce absentee-owned capital through threat of inefficiency or direct action by organized management, to relinquish its active control, and accept the position of bond or preferred stockholder.
5. To buy capital off, making its owners content to relinquish active control in consideration of greater security and adequate returns on investments.

Willis Wisler writes the third chapter of Part II, "Practice of Labor Management." His conclusion is that if each instance of successful labor management—such as is outlined in this book—is carefully examined it will be bound to rest on three conditions:

1. A definite and consistent labor policy inaugurated and backed up by the chief executive or board of directors.
2. The organization of machinery for putting into effect these labor policies.
3. The competent administration of such machinery.

In the next chapter of Part II, O. F. Carpenter discusses "Instituting Employee Representation." This topic has been mentioned so frequently that it is only necessary to give the concluding paragraph of the chapter:

It is important that the employer see this situation when he begins contemplating a move in the direction of industrial democracy. If this employer has allowed the newspapers and professional "leg pullers" to get him excited about "reds" and "Bolsheviks," if he has lost his restraint and indulged in violent denunciations, in hurling epithets such as Bolshevik, traitor,

free lover, etc., if he has gone so far as some of them and has outspokenly advocated the firing-squad treatment for dissenters and domestic troubles, his first step toward industrial democracy is to take a vacation, to cool off, and cut out puerile nonsense. He needs to be born again into the good old American spirit of toleration. An employer has everything to lose and nothing to gain by undignified "slopping over." Let the employer quietly dismiss all his spies and spotters (if he has them) months before he begins to talk about a "new day" in the shop. By thus removing the causes of irritation and mistrust he will pave the way for confidence and co-operation when the effort is put forth to establish a joint shop government.

The second section of the book concludes with a chapter on "Joint Control" by Jennie McMullin Turner. This chapter gives the result of a questionnaire sent out in October, 1919, in which the firms that had been visited were asked for their experience in the matter of per capita production since 1914.

These replies came from industrial plants, not only where men are on a straight day rate but also from those where employees are on piece rates. The "conclusion" or inference may be said to question the accuracy of the statement that labor in this country is only 50 or 60 per cent as efficient as it was before the War.

III

The book is open to the same criticism that is to be found in most books which are the compilations of many writers. There is a lack not only of unity but also of coherence when the chapters are read consecutively. This is a fault not easy to overcome and doubtless in a book of this sort work must be delegated to several writers in order to cover the wide field from Wisconsin to Maine.

Several chapters give the impression that the original manuscripts were revised by some professional writer for a popular magazine in order to insert a little "jazz." The fact, however, that the book is virtually sponsered by the Department of Economics at the University of Wisconsin should be a sufficient guaranty that accuracy has not been sacrificed for human interest of popular magazine writers.

Here and there in the volume one notices an occasional slip—doubtless the fault of the printer or of the proofreader. On page 83 for example John Leitch is spelled "Leuch." Elsewhere in the book it must be frankly confessed, this name is spelled correctly. One who is familiar with the management of the industrial plants visited will notice a mention of several practices that are now obsolete. Such changes have, of course, been made since the book was written in order to meet the conditions arising out of the period of readjustment in industrial relations.

The book is sufficiently up to date, on the other hand, to record the court decision in the case of Dodge vs. Ford Motor Company:

> There should be no confusion (of which there is evidence) of the duties which Mr. Ford conceives that he and the stockholders owe to the general public and the duties which in law he and his co-directors owe to protesting, minority stockholders. A business corporation is organized and carried on primarily for the profit of the stockholders. The powers of the directors are to be employed for that end. The discretion of directors is to be exercised in the choice of means to attain that end, and does not extend to a change in the end itself, to the reduction of profits, or to the non-distribution of profits among stockholders in order to devote them to other purposes. It is not within the lawful powers of a board of directors to shape and conduct the affairs of a corporation for the merely incidental benefit of shareholders and for the primary purpose of benefiting others, and no one will contend, that if the avowed purpose of the defendant directors was to sacrifice the interest of shareholders, it would not be the duty of the courts to interfere.

Not many executives can afford the time to visit industrial plants widely scattered in location. This book, therefore, affords an opportunity to make fireside trips to see what the other fellow is doing. If certain plants are not so open for inspection, it may not be the fault of the writer-guide, but may be due to a notice over the gate, "Visitors must secure a special pass from the general manager before going through the plant."

Taken as a whole, the book is probably the most timely and possibly the best that has yet appeared on the topics discussed in

its various chapters. It is a work that will appeal both to the professor of business administration and to the business executive. No plant library can make any claim to completeness without a copy of "Industrial Government."

HANDBOOK OF CHURCH ADVERTISING

By Francis H. Case. 186 pp. The Abingdon Press

Reviewed by Christian F. Reisner, D.D.*

For two reasons this book should appeal to the business executive. In the first place most of its material is based upon suggestions offered by advertising experts. These suggestions are applicable to any campaign regardless of the product advertised. I have a feeling that this is the reason why the editor of *Administration* is willing to devote space to a review of the contents.

A single quotation—a suggestion offered by W. Frank McClure in charge of the Publicity Department of The Fort Dearborn National Bank of Chicago to test for good advertising—will show that the book is practical and well worth the perusal of any executive who must decide questions relating to advertising policy:

Is it true?
Does it ring with sincerity?
Does it "knock" or even slur?
Has it too much novelty?
Is the language too flowery?
Is it grammatical?
Is the wording as simple and direct as it should be?
Does each word best express the meaning you want to convey?
Can any part of your text be misunderstood?
Are the punctuation and spelling correct?
Is there too much copy for the space?
Will your text of twenty-five words or less make the reader think of a hundred?
Does the illustration link up with the text?
Does your "ad" as a whole have the atmosphere of the goods advertised?
Will it get your message across?
Will the type set-up and the general layout permit the text to be read easily?
Will the "ad" appeal directly to the audience you want it to reach?
In gauging the sales value of your text, have you put yourself in the reader's place?
Will it sell the goods?

The other reason why "Handbook of Church Advertising" should appeal to the business executive is that he should be more interested in this specific form of advertising. Many executives who are heavy buyers of space in the newspapers, magazines, car cards, bulletin boards, etc., forget that this same force which makes a customer for the house, can be so used that it makes a member for the church. For some reason the use of advertising by the Christian church has been slow, but is becoming more common.

Possibly, the reason may be that the church is always conservative. Church officials have few funds with which to exploit new methods. Then, too, a false notion of dignity which so long retarded financial advertising has held back even the most progressive members of the congregation. It remained for the patriotic business man to see the need of church advertising and then to push it into efficient use.

Five years ago a program showing the value of church advertising was presented in connection with the convention of The Associated Advertising Clubs of the World in Philadelphia. At that time a few individual churches had advertised but no national appeal had ever been made with advertising. Some of the best known experts spoke at that time and these addresses were put in a book under the title of "Church Advertising." A program more or less strong has been put on at every A. A. C. of W. convention since then.

In this way the question has been agitated

* President of The Church Advertising Department of The Associated Advertising Clubs of the World.

and religious advertising has increased. The Church Advertising Department of the A. A. C. of W. has had some influence in starting some and in encouraging other large campaigns. The first general relief appeal made by "advertising" was undertaken when the Armenian Relief Committee was persuaded to try newspaper display space for an appeal. The department furnished advisers and copy-writers free. With an expenditure of $7000 this plan brought in over a half-million dollars. This started the Far East Fund on its wide-reaching campaign carried on so extensively since then. The Methodist Centenary raised $108,000,000 in one campaign and they employed every known kind of publicity from bill-boards and slides in motion-picture theaters to newspaper publicity agents and paid space. It was the privilege of the chairman of this department to plan much of this advertising and to advise in all of it. From these and other similar efforts came publicity departments in the Presbyterian, Episcopalian, Methodist, North and South, Baptist, North and South, and Lutheran denominational organizations. But most of their work is confined to publicity and little effort is expended to either encourage or teach how to do effective advertising. Very little actual church advertising is being done anywhere by local churches and so an effort will be made to encourage its wider use.

A plan is now proposed by the Church Advertising Department of The Associated Advertising Clubs of the World. The executive committee of the A. A. C. of W. will be petitioned by the Church Advertising Department to carry out a national campaign for church attendance similar to the advertising campaign which it put on at the beginning of the war before the government furnished expense money. The advertising mediums will respond as promptly and as liberally with space and other help as they did then. The Church Department will furnish "copy" and "plans."

The local ad clubs will be related to the churches of the community for active work. Each club will appoint a committee on church advertising which will arrange a conference and luncheon with the local ministers and lay leaders. Experts will there point out possibilities and propose a class in church advertising backed by this committee. An ideal textbook is ready for use. An exhibit of "samples" and a library will be collected by each club.

The advertising agents' department will be asked to prepare copy and propose plans to secure the aid of local merchants in supporting an actual church advertising effort. By way of illustration, it may be said that Miller and Craig of Madison, Wisconsin, secured pledges of $1 and $2 a week from enough merchants to carry a full-page advertisement in the dailies every Saturday with an addended list of the merchants who paid for it and thus made it possible.

The outdoor department will prepare and print "stock" posters which local churches can purchase and post with a particular church invitation inserted.

The religious press department will be asked to furnish a page a week in all church papers, which page will be filled with church advertising department plans and "copy" and reasons for church advertising.

The national office of the department will start a group of local conferences and classes, and will map out plans for conducting them as well as for training and suggesting leaders.

Plans will also be gathered and scattered in a news sheet to papers, clubs, and churches. Several denominations have incipient publicity departments which can be interested and aided in developing church advertising in those particular denominations, while others will be encouraged to form a similar department.

An appeal for financial aid will be sent to concerns that advertise, to all clubs, and to individuals who believe that advertising will increase church attendance and so stabilize business and increase happiness. Any modern helper of righteousness will be welcomed in this work since church attendance will be urged on the Jews, Roman Catholics, and Protestants alike.

In this way funds will be secured to employ a national secretary to guide the local clubs and to gather plans and to aid in putting on a national campaign.

In the effort to give practical help to churches desiring to advertise expertly, the addresses delivered at the church advertis-

ing department at the Indianapolis Convention in 1920 have been put into the book now being reviewed.

Such men as W. C. Freeman, K. H. Fulton, Homer J. Buckley, Frank D. Webb, William H. Johns, W. F. McClure, James Schermerhorn, and fifteen others spoke at that convention. But the publishers decided that to publish the addresses in their original form would give much repetitional and unrelated matter. Hence they selected a skilled writer who took the best and most pertinent material out of all the addresses and with new material built a book in such logical form that it provides ideal information on church advertising. Its title is "Handbook on Church Advertising."

Its chapter headings are as follows:

I. Why Advertise the Church?
II. Some General Principles of Advertising Applied to Church Advertising.
III. Who Shall Have Charge of The Church's Advertising?
IV. What to Advertise.
V. Channels of Publicity.
VI. Making Type Talk.
VII. Adaptation of Local Conditions.
VIII. The Seasonal Approach.
IX. National Advertising and the Church.
X. The Budget: How to obtain Funds.
XI. How Advertising Builds the Church.
XII. The Goal of Church Advertising.

Most of the material is furnished by business men who are convinced that the church should advertise.

Merle Sidener of Indianapolis said:

> The church is the most potential institution for uplift and inspiration in the world today.

Father Heckman, a Catholic priest of Waco, Texas, added:

> When printing was invented, the Almighty intended that this art should be made use of to promote His glory and the salvation of souls. One of the first books printed was the Bible.

Lupton Wilkinson asked:

> What would become of the theater if that institution advertised itself only within its own walls and by half-inch advertisements once a week?

We need to have a united general appeal as well as special church invitations and so James T. Schermerhorn, President and Publisher of *The Detroit Times* spoke:

> Thanksgiving services are a first-page event in Detroit every year because all faiths—Protestant, Catholic, and Hebrew—come together in this festival of gratitude. United in endeavor, the churches stand a chance for space; divided, they fall into the wastebasket.

The fact was emphasized that as a result of a few thousand dollars spent in the daily papers of Ohio and Indiana more people attended the religious celebration at Columbus on July 4, then went to the prize fight at Toledo in 1919.

We need to see the value of motion-pictures and similar drawing cards to get people into church before we can give them the "gospel." Rev. C. C. Marshall at that time heading the motion-picture department of the Methodist Centenary said:

> Here is a mighty possibility for Kingdom service on which we may well pray God's blessing and guidance. One of the most prominent Episcopalian clergymen in America has declared that if Christ were here today He would utilize the motion-picture. We do not know what He would do, but we do know that He taught and preached in parables (pictures) "and without a parable spake he not unto them."

The local church must pull in its own audience. Merle Sidener well added:

> Unless the local churches will do local advertising, a big, broad campaign will be a good deal like that of a manufacturer who undertakes to advertise his goods nationally, but no one knows where to go locally to get the goods.

Its appeal must be broad, then it will pay. So Frank D. Webb, Advertising Manager of *The Baltimore News* continued:

> Generally the advertising solicitor finds that the church which says it hasn't funds for advertising is letting a few dollars a week slip through its hands on small forms of advertising which are confined in their appeal and are scarcely broad enough to build up the regular church attendance and particularly to draw the type of people who will increase the church's revenue.

It was found by the Income Tax Collector that New Yorkers spent over $100,000,000 each month during the spring of 1920 for taxable luxuries. Recounting this fact Mr. Wilkinson asked:

> The church has come to the point where it must ask itself, not the boy in Sunday School nor the business man in his office, why other institu-

tions and other influences have more hold on the daily life of millions, even of millions who rate themselves Christians, than the church itself?

The author closes his book with the statement that advertising is "the method of the one in the parable of our Lord who went out into the highways and hedges and compelled others to come in."

MIND AND WORK

By Charles S. Myers, M.A., M.D., Sc.D., F.R.S., Director of the Psychological Laboratory, Cambridge University; Member of the Industrial Fatigue Research Board; Lieut.-Colonel, late R.A.M.C.; sometime Consulting Psychologist, B.E.F. xi, 175 pp. G. P. Putnam's Sons

Reviewed by James F. Tanner*

The title of this interesting book is unfortunately a trifle misleading. What might be expected to be a specialized and perhaps somewhat technical discussion of the most important factor in industrial and commercial efficiency—the psychological—is in fact a general and popular discussion of all four factors—the mechanical, the physiological, the social or economic, as well as the psychological.

The author's plan has been to take certain phases of industrial science—he has taken five: (1) Movement study (2) fatigue study (3) selection study (4) incentives study, and (5) industrial unrest—and to show how they are influenced by psychological, mechanical, physiological, and social or economic factors. While it is not to be understood that all four factors are discussed in connection with each phase, at least three factors are considered in several cases. For example, in the discussion of movement study the author found it necessary to take into consideration mechanical and physiological factors as well as the psychological.

The space in this little volume that might still have been allotted solely to the psychological factor is further reduced in order to include an explanation of each of the phases of industrial science considered. Methods and instruments used, and results accomplished in England and America also receive much attention.

The comparatively small part of the book dealing with the relation of psychology to the well-being and efficiency of industrial and commercial workers is, however, exceedingly interesting and valuable. In these pages the main purpose of the author is to prove that the physiological factors involved in purely muscular fatigue are now fast becoming negligible, compared with the effects of mental and nervous fatigue, monotony, want of interest, suspicion, hostility, etc.

Nevertheless the chapter on movement study deals more with the physiological, or purely muscular fatigue than with the mental, as illustrated by the following representative paragraphs:

> There must be few factories at the present day where it would be impossible to reduce fatigue by abolishing needless stooping and by devising proper seating accommodation with sliding seats, back rests, foot rests, etc. This has already been done in various workshops, especially in America, and has effected a considerable saving of fatigue and increase of output.
>
> Another principle of motion study is to try to combine separate movements into a single movement, one uninterrupted (circular) movement being generally less fatiguing than two separate (angular) movements. Yet another principle is to combine, as far as possible, similar movements of the two hands at the same time. It requires much more effort to raise first one hand and then the other, than to raise them both together; a good deal of saving has been effected by this method of simultaneous, symmetrical movements of the two hands. Another principle of movement study—this list does not pretend to be exhaustive—is based on attention to rhythm of movement. Obviously it is much less fatiguing to perform an act rhythmically than by an irregu-

* Special Reviewer for *Administration.*

lar series of jerky movements; of course, every person has his own best rate of repetition of movement, a rhythm peculiar to himself.

As regards the importance of the psychological factor in movement study, much of what the author has to say is summarized as follows:

> It is psychologically most improbable that any one good method or style of motion study can ever be the best for all persons, and it remains for psychological research to determine the relation between individual physical and mental differences and the different methods needed to satisfy these differences. While the employee should be trained from the start in what has been proved to be one of the best methods, he should be at full liberty to substitute another, if he prefers it and can show that it is as effective. To aim at pressing all workers into the same mould is not only to destroy individuality and to encourage needless monotony, but also to run counter to known psychological principles.

Perhaps an explanation of the fact that little is said of the effect of the psychological factor in movement study is found in the author's admission that the subject has as yet been scarcely touched by the psychologist. Dr. Myers makes, however, a valuable contribution in directing attention to problems that should be attacked first. One of these is to ascertain how far movements differ when performed slowly and when performed at proper speed.

In the chapter on fatigue study the author explains how the methods of the psychologist and the physiologist differ, the former treating the organism as a whole, the physiologist removing a single muscle with its nerve from the body and studying the phenomena of fatigue produced in it by electrical stimulation.

Other subjects discussed in the chapter are tests of mental fatigue, the construction of work curves, and the analysis of psychological factors, that determine the forms of these curves. The effects of drugs on mental and muscular fatigue are stated. Of greater importance are the pages dealing with the effects of rest pauses of different length on mental efficiency. The unreliability of interpolated tests to determine muscular or mental fatigue is emphasized, as is also the importance of rigorous, precise training in the methods of experimental psychology in order to avoid the pitfalls incident to human experiment.

Fatigue and feelings of fatigue or freshness, according to the author, afford no indication of the work that can be immediately performed, and conversely the quantity of output is not an exact measurement of fatigue.

In connection with the discussion of work curves the author states:

> It is, of course, to be expected that the curve of industrial output must vary considerably with the kind of work done. When the work involves merely strenuous muscular exertion we may expect a rapid and early rise in the work curve to a maximum followed by a fairly definite fall during the morning spell, and after dinner a fair recovery followed by a progressive, well-marked fall throughout the afternoon. When, on the other hand, the work is characterized by skill and dexterity, we find a slower, more gradual rise to the maximum, followed by a less obvious fall, a less complete recovery after dinner, and a much smaller drop at the close of the afternoon. When, as in machine work, the output is largely independent of the human factor, the curve of output may be expected to reach a maximum at about the third hour of the morning spell, then to fall slightly, and during the afternoon to maintain so high a level that the output may exceed, or at least equal, the morning's output. Lastly, when, as in lathe machine work, the factor of rhythmic action is added to skilled and strenuous movement, not only will the afternoon's output remain high, but also no fall may occur in the last hour of the day; while the morning output will start at a low level and increase enormously during the first three hours of work, falling towards the end of the morning less than in purely muscular work, but more than in merely dexterous work.

The author further states that:

> Obviously, therefore, it is a thoroughly unscientific principle to set or to expect a constant rate of output throughout each hour of the working day.

As many opposing factors influence the work curve the author points out that certain rest pauses are more favorable to subsequent work than pauses of greater or shorter length. A good deal of preliminary work having the end in view of determining the best pause for a specific operation has already been done in the psychological laboratory.

The length of the rest period between one day's work and another can, of course, be regulated by increasing or decreasing hours of work. It is important to note, however, that the full effects of reduced hours of work may not be manifest until several months have elapsed. By way of explanation the author says:

> Alteration in hours influences the unconscious, as well as the conscious, factors that determine output. The human organism, after becoming adapted to certain hours of work, requires time, when that adaptation is disturbed, before it can give its maximal response to improved conditions. It appears that when such gradual adaptation to improved conditions is effected, if the old conditions be then restored, the output immediately reverts to its previous amount.

If this statement is confirmed by further investigations, it shows the fallacy of introducing overtime work, as apparently another long period of adaptation is needed after overtime has been abolished.

In the chapter on selection study the author points to the need of careful physiological and psychological analysis of (1) the requirements of different occupations, and (2) individual mental and physical differences among those intending to work at them. Of the earliest psychological investigations, those on reaction time, the author says:

> It was found that, when instructed to react as rapidly as possible to a prescribed signal, some persons were naturally of the quicker, less reliable, so-called "muscular" type, attending predominantly to the movement by which they had to react, while others were naturally of the slower, more reliable, "sensorial" type, attending predominantly to the signal which they were expecting to receive.
>
> Among other available tests may be mentioned those of sensory discrimination, manual dexterity, mechanical skill, æsthetic appreciation, rate of reading, spelling ability, tests which reveal the subject's special interests, his muscular or mental fatigability, his accuracy, steadiness, and neatness, his memory for names, figures, faces, or facts, the breadth or detail of his observation, his improvability, distractibility, suggestibility, etc. Their application to those who offer themselves for different occupations, e.g., for machinist's or assembler's work, designing, clerical, or secretarial work, salesmanship, etc., is obvious.

In general the tests which the author discusses may be classified under two heads: (1) Tests which are more or less exactly comparable to the conditions under which the subject works, and (2) tests designed to discover isolated mental characteristics.

The methods described, of determining and applying tests, are especially suggestive. First of all are determined the special psychological processes required for success in the occupation for which tests are needed. It is next ascertained how closely success or failure at the tests is correlated with known success or failure at the occupation in question. Those tests which show insufficient correlation are scrapped; the others are weighted according to the different proved degrees of correlation.

It is interesting to note how clearly the author's ideas concerning restriction of output are in accord with those of the Committee on Elimination of Waste in Industry, whose complete report is to be published in the fall. The author summarizes his chapter as follows:

> Output may be restricted by the employer or by the employee; either of them may restrict it deliberately, or more or less unconsciously.
>
> Deliberate restriction of output by the employer may come about through at least three causes, viz., (1) The dearth of raw material (2) the fear of flooding the market, coupled with the desire to maintain an artificially high price for his manufacture, and (3) the need for co-ordinating the requirements of different departments of his factory. More or less unconscious restriction of output by the employer may arise (1) through bad organization and out-of-date equipment of his factory (2) deficient training of his employees in the best methods of work (3) ill-considered arrangements of the working hours (4) inadequate rest pauses, and (5) defective selection of his employees for the task for which they are best fitted.
>
> The prime causes of deliberate restriction of output by the employee at the present day are discontentment, suspicion, and jealousy. An important cause also lies in the fear that with increased output the scale of piece-rate or task-rate payment will be reduced.
>
> Another cause of deliberate restriction is the fear of disloyalty to less capable fellow-workers. This can only be safeguarded (1) by the establishment (based on scientific study) of a recognized range of individual differences of output, within which workers may feel secure in their employment (2) by a proper selection of workers at the outset according to their special abilities, and

> (3) by a guarantee against loss from unemployment when arising not through any fault of the worker.
>
> Output is unconsciously restricted by workers as the result of a physiological process of adaptation, protective against undue fatigue at the end of the day . . . the worker unconsciously proportions his efficiency to the length of his working spell or shift. It is owing to changes in such unconscious adaptation that reduced hours have so often yielded as great an output as was obtained before reduction, or even an increased output. The unconscious nature of this process is doubtless indicated by the fact that the reduction in working hours may not show its full effect until many weeks after the change.

The chapter on systems of wage payment is a good resumé of the best that has been written on the subject. It contains, however, little that is new either in subject matter or in treatment. The author concludes that:

> While the straight piece rate is usually preferred by the workers to any other form of payment by results, most employers favour either (1) the differential piece-rate system, or (2) some form of bonus or premium system, in which extra earnings are added to the day rate and are dependent either upon the time saved in performing a standardised task, or upon the percentage of efficiency attained in relation to a standardised rate of output.
>
> Under ideal conditions, the day rate has undoubtedly much to recommend it. Indeed in certain circumstances and occupations, where, e.g., the highest quality of work is essential, where measurement of output is impossible (owing to its nature, its variable character, etc.)—or where sufficiently thorough inspection of the work is impossible, it is the only satisfactory method of payment. Day rate has also the great advantage of allowing a greater variety of work to be performed during the day, thus lessening the ill effects of monotony. But it makes no differentiation between the good and the indifferent worker, and therefore tends to a standard of mediocre uniformity in output and quality of production, unless other interests besides those of payment can be fostered.

Speaking of industrial unrest, the author points clearly to the real issue:

> It would be absurd, then, to attribute the present industrial unrest merely to the strain of warfare. Such unrest existed, though by many unrecognized, long before the war. It was becoming more intense during the period immediately preceding the war. Employers and employees had by then become definitely solidified into separate groups, each imbued with what has been termed its own "herd spirit," each developing purposely or instinctively its own defences, each resolved to defend his own position and to demolish that of the other "herd."

As a remedy, greater co-operation, brought about by the participation of labor in management, is urged. That industrial democracy must develop slowly is admitted by the author—and he wisely adds, "Despite popular suffrage, the real control of the country has suffered only gradual change."

PROBLEMS OF TODAY

By Moorfield Storey. 258 pp. Houghton Mifflin Company

Reviewed by William A. Robinson *

This little volume contains the Edwin L. Godkin Lectures delivered at Harvard University in 1920. The terms of the foundation prescribe as the general subject "The Essentials of Free Government and the Duties of the Citizen," and Mr. Storey has taken as the subjects of his series, the use of parties, lawlessness, race prejudice, the labor question, and foreign relations.

While the tone of his discussion is conservative, he lays deserved stress on the need of handling present-day problems in the light of the great social, economic, and political changes of recent years. In the face of the present-day demand for governmental action on all imaginable social grievances and shortcomings, Mr. Storey

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wisely emphasizes the responsibility of the individual.

Government is a business in which every citizen is a partner and to which he must attend, if only as a matter of business.

Mr. Storey neglects, however, the problem of governmental machinery. Accepting the truth of his thesis, it may still be questioned whether public interest and individual activity can in the long run effectively operate a clumsy and complicated governmental machine intended for the simple business of a former age.

All reasonable persons, however, can heartily agree with his denunciation of our easy-going tolerance of lawlessness, of the pernicious and selfish activity of labor organizations, and of the clannishness of racial groups.

Equally sound is his exposition of the dangers of government ownership of railroads or other public utilities, and of socialism in general.

Perhaps the lecture deserving the most widespread and thoughtful consideration is the closing one of the series on our foreign relations.

In view of our national tendency to consider ourselves governed by only the highest motives, while Great Britain, Germany, or Japan are wicked land-grabbers and self-seekers, it is well that someone should point out the unreasonableness of our own conduct on numerous occasions and particularly, the decidedly Prussian tendencies of the Monroe Doctrine.

There is little new in Mr. Storey's volume. Economists, philosophers, and historians have said the same things at many different times and in many different places; but as an orderly presentation of important current problems, admirable in form, and elevated in tone, it deserves to be widely read.

BRIEF ANNOUNCEMENT OF NEW BOOKS

Risk, Uncertainty and Profit. By Frank H. Knight. Houghton Mifflin Company.

Health of the Industrial Worker. By Edgar L. Collis and Major Greenwood. J. & A. Churchill, London.

Industrial Problems and Disputes. By Lord Asquith. Harcourt, Brace and Company.

Time Study and Job Analysis. By William O. Lichtner. The Ronald Press Company.

Science and Common Sense in Working with Men. By Walter Dill Scott. The Ronald Press Company.

Liberalism and Industry; towards a better social order. By Ramsay Muir. Houghton Mifflin & Company.

Management of Men. By E. L. Munson. Henry Holt & Company.

More Work Per Man. Tested and selected methods of managing men compiled from Industrial Management. By J. H. Van Deventer. Engineering Magazine Company.

Industrial Securities. By Clinton Collver. Investment Bankers' Association of America.

Economic Aspects of Geology. By Charles K. Leith. Henry Holt & Company.

Economic Aspects of the Great Lakes—St. Lawrence Ship Channel. By Roy S. MacElwee. The Ronald Press Company.

Oil Land Development and Valuation. By R. P. McLoughlin. McGraw-Hill Publishing Company.

Cecil Rhodes, A Biography. By Basil Williams. Henry Holt & Company.

Text, Type and Style. By George B. Ives. Atlantic Monthly Press.

Merchant Vessels. By Robert Riegel. D. Appleton & Company.

Marketing of Whole Milk. By Henry E. Erdman. Macmillan Company.

How to Choose and Get a Better Job. By Edward Jones Kilduff. Harper & Brothers.

Trading With Asia. By Frank R. Eldridge. D. Appleton & Company.

Le Gouvernment des Enterprises Commerciales et Industrielles; Leçons professées a l'école des hautes études commerciales. By J. Carlioz. Dunod, Paris.

Functions of Money; a handbook dealing with the subject in its practical, theoretical and historical aspects. By William F. Spaulding. Isaac Pitman & Sons, London.

Economic History of the United States. By Thurman W. VanMetre. Henry Holt & Company.

Accountants' Reports. By William H. Bell. The Ronald Press Company.

Mathematics of Accounting and Finance. By H. A. Finney. The Ronald Press Company.

Wall Street Accounting. By Frederick S. Todman. The Ronald Press Company.

Twenty Twenty-Minute Lessons in Bookkeeping. By F. L. Beach. The Ronald Press Company.

REVIEWS OF BUSINESS PAMPHLETS

Acceptances. Prepared and Issued by The American Exchange National Bank, Broadway at Cedar Street, New York City.

This is the third edition of a very useful business pamphlet. It is doubtless so familiar to business executives that no detailed review needs to be made.

To state its contents briefly, they point out the importance of acceptances as a means of increasing and simplifying domestic and foreign trade.

The pamphlet will be a good desk companion for many executives because it gives a digest of the amendments to the Federal Reserve Act and regulations of the Federal Reserve Board, the Federal Bill of Lading Act, United States Ware House Act, and the Edge Export Finance Act. It is the inclusion of such a digest that differentiates this edition from its predecessors.

As a sort of an appendix the following forms are given: application for the commercial letter of credit, commercial letter of credit, bankers' acceptance, acceptance credit agreement, and trade acceptance.

The Chicago Board of Trade. By James E. Boyle, Ph.D. Professor of Rural Economy, College of Agriculture, Cornell University, The Chicago Board of Trade, Chicago, Ill.

This business pamphlet is really a condensation of a larger work. The latter was reviewed in *Administration* for January, 1921, page 123, "Speculation and the Chicago Board of Trade," reviewed by Ashur Hobson.

Readers of *Administration* are therefore referred to this review of the larger book by James E. Boyle. The abbreviated edition may be obtained without cost upon application to The Chicago Board of Trade, Chicago, Ill.

Amortization. Notes of Interest to Investors, Executors, Trustees, and Beneficiaries under Trusts. The Guaranty Trust Company, 140 Broadway, New York City.

Amortization, as here used, is the gradual charging off and extinction of the premium which must usually be paid by administrators for the gilt-edge bonds such as the law requires for trust funds. When such bonds are held until maturity, this premium is lost, and must be charged against either principal or income.

New York courts have held that unless a clearly stated contrary direction is given, this premium loss shall be amortized by a proportionate deduction out of the fixed interest on the bond at each interest period. This protects the remaindermen, by handing over the estate intact; and protects the life tenant by preventing the entire premium amount being charged off at once—which might eat up all income from the investment for several years.

Charts and definitions of two forms are given: "Pro-rata Amortization" in which the premium is divided by the number of interest periods during the life of the bond, and the resultant amount is written off against the cost of the bond at each period. When applied to small amounts, with short maturities, it is declared this method does substantial justice to both life-tenants and remaindermen. But for large amounts, what is called "Scientific Amortization" must be used. It is based on the theory that the difference between the interest earned on the actual investment, and the interest earned on the par value of the bond is not income, but principal, and therefore should not be paid to the life tenant, but should be returned to the principal of the estate for reinvestment. There is a new book value at each period on which the just interest to the life tenant is figured. Charts make the details very clear. The pamphlet may be obtained gratis upon application to The Guaranty Trust Company, 140 Broadway, New York City.

Industrial-Economic Conditions in the United States. National Industrial Conference Board, New York City.

This first of a series of timely bulletins of the National Industrial Conference Board is divided into six sections: General Summary, Labor Supply, Wage Changes in Industry, Changes in the Cost of Living, Hours of Work, and Relations between Employers and Employed.

The result is a valuable survey of certain of the broad tendencies at present found in American industry.

The field covered is too broad for any general resumé, but the following quotations may be noted:

> To stimulate buying at home and to secure markets abroad, efforts are being made to reduce the cost of production by lowering wages and increasing productive efficiency. General decreases in wages have been made within the last year. . . . They range from 10% in some industries to a maximum of 75% in the morocco industry in Delaware. . . .
>
> Buying by the public is still restricted and retailers are slow to stock up. . . . A hopeful sign. . . is the continued drift of workers from the congested manufacturing centers to the farms. . . . This is relieving the housing shortage. . . . Altogether it seems likely that the United States will continue in a subnormal business condition during the remainder of 1921.

It is pointed out that present unemployment is probably "greater than at any previous period for which records are available"—even than that which prevailed during the panic of 1907. But no such visible suffering has resulted from the present depression.

One explanation is that labor has saved a fund upon which it is now drawing. The figures given are: Savings bank depositors in June 1914, were 11,109,499, with deposits of $4,936,591,849. In June, 1920, depositors were 11,427,546, with deposits of $6,536,470,000.

As to wages the following figures are interesting, gathered by an investigation of the Board:

> In December, 1920, the average hourly earnings of male employees in American industries were from 127% to 198%, and those of women employees from 111% to 192% higher than in September, 1914. . . . The greatest increase was in the wool manufacturing industry; the least increase in rubber manufacturing.

A table of wage increases is given and adds to the practical value of the pamphlet for business executives.

The figures on increase in cost of living given by the Conference Board follow:

> From July, 1914, the cost of living among wage-earners in the United States rose slightly until 1915 but very decidedly thereafter until the peak was reached in July, 1920. . . when it was 104.5% above July, 1914. Since then there has been a marked recession so that on June 1, 1921, the cost of living was but 61.9% above July, 1914.

In the pamphlet are found some very interesting suggestions on hours of work. They include this conclusion from a study in five major manufacturing industries:

> In the majority of the establishments reductions in hours have resulted in decreases in output about in proportion to the time lost, and in general, the ability to increase hourly efficiency and thus to make up for reductions in hours, either in part or in full, was largely determined by the amount of hand work as distinguished from automatic machine work entering into a given process.

The pamphlet closes with some views and data on the problem of the "closed" versus the "open" shop.

In the back of the booklet, as a sort of appendix, is a full list of the 39 research reports, and 18 special reports already printed by the National Industrial Conference Board.

Declaration of Principle on Industrial Relations and Industrial Management. By the Manufacturers Association of Connecticut, Hartford, Conn.

Here is a sort of "Declaration of Independence" of the Connecticut manufacturers. It might serve as a model for other groups or employers who are seeking a very general code of industrial ethics. It contains much that is good among its 46 points which are believed in by the association, and its 8 points which are opposed by the association.

For example:

> We believe in healthful and safe working conditions.
>
> We believe in compatibility of occupation.
>
> We believe that the human factor in industry deserves the first and primary consideration.
>
> We believe in the constructive development of our democratic system of public education.
>
> We are opposed to despotic or autocratic treatment of the matter of human relations.

But some of the points are so vaguely worded and others so obviously platitudinous that they will help but little to

secure that clear definition of American industrial problems which must precede their solution.

For example, will any business executive dispute Points 1 and 2 of the *pros?*

1. We believe in fair dealing.
2. We believe in good faith in the matter of agreements and contracts.

Or Point 2 of the *cons?*

2. We are opposed to violence, destructive agitation, class wars, revolutionary socialism, lawlessness, and disorder.

Does one expect the worker to do anything but laugh up his sleeve at such proclamations as:

6. We are opposed to excessive leisure because it prevents a reasonable measure of productivity and is liable to lead to social evils.

The point here, as with the word "proper" in such phrases on page 1, as, "proper constructive legislation"—"proper regulation of child labor"—and page 4, "a proper American standard of living"—is that each side still claims the right to determine what is "proper," or what is "excessive" leisure. A few hours a week of golf may seem excessive leisure to the ultra-strict.

This "code" could be halved, and put in clear concrete language, and still maintain rigidly all those principles of industrial management upon which the development of American life really depends.

An Essay on Executive Efficiency. By C. H. Lehman, President, The Dictograph Products Corporation, 220 West 42 St., New York City.

The purpose of this business essay was doubtless to promote the sale of the system of interior telephones manufactured by the company of which the author of the pamphlet is the active head. It is worth mention in this department because of the sane suggestions it contains for business executives on the subject of efficiency.

The work of the executive is thus outlined:

Executives and supervising heads are employed to direct the work of others and for the purpose of reducing the cost per productive unit of subordinates and employees coming under their control. The true executive does not produce a specific result, such as a typewritten letter. His product is *thought*, which evolves itself in a material manner through the product and effort of his subordinates.

It is not a question, therefore, of reducing the wage cost of the executive employee, but of increasing his *efficiency* so that he may better accomplish the purpose for which he is retained, viz., that of effectively controlling and supervising those under him.

The productive value of an executive or supervising head cannot be measured in minutes, hours, days, or any other period of time. His productive value is regulated entirely by the amount of time which he is enabled to spend in *productive creative labor-thinking*. It is the ability to make others do things that classes a man as a true executive.

Executive efficiency is regulated almost entirely by the executive to spend the minimum amount of effort in performing routine work.

It is when routine work is completed that real creative thought begins. The value of an executive or supervising head is limited by the volume and quality of creative thought which he is able to produce. Both the volume and the quality of creative thought is increased and improved in exact proportion to the amount of routine work which is eliminated. So long as there is any set task to perform, the mind cannot be brought into that state of repose which makes possible the generation of new and better ideas.

Mr. Lehman writes as follows about the increased production of executives:

It is when everything is running smoothly, and he has completed the routine supervision of the day, that his mind begins to work, and actually produce.

It is when his routine work is completed and his mind is open, that his brain searches for some problem to solve. It is then he plans improvements in his sales campaigns, short-cuts in production, new ideas and changes in output.

He then realizes that the time lost in useless operations, in the gathering of data, in the walking back and forth to collect information are all important factors in his costs.

His brain rapidly calculates that the normal working capacity of each employee is not being properly applied, and that each one is wasting many minutes each working day, involving a consequent loss in productive efficiency.

It is then that he realizes that by eliminating this lost motion, and by rearranging certain routine and procedure that he can increase productive efficiency to such a degree that many employees can be placed at other productive labor.

Thus automatically, does the labor cost, the operating cost, the burden of expense of production become less.

That is how the executive serves his real purpose.

A fault of the ordinary executive is outlined as follows:

The chief reason that the executive has been so negligent of his own efficiency, while giving such detailed attention to the efficiency of the minor employees of the average business institution, is because he can observe their operation and work due to his very position in relation to the field of operation. On the other hand, he is so close to the problems surrounding his own actions that he looks right over them and fails to observe the great losses occurring in his own private office and in his own daily work.

Because a piece of business literature is a sales talk is no reason why it may not contain valuable suggestions. The danger point of any executive is when he thinks he knows it all.

This essay which may be obtained gratis upon application to The Dictograph Products Corporation is worth the careful perusal of an executive regardless of whether or not he is in the market for a certain office appliance mentioned specifically in the pamphlet.

Coal Production Costs. By R. W. Gardiner, National Association of Cost Accountants, 130 West 42 Street, New York City.

This booklet confines itself to cost accounting for coal producers and does not discuss cost accounting for coal distributors, although reference is made to some systems in the retail field.

Before going into the technique of cost accounting, Mr. Gardiner mentions the uses made of cost data by the operating, sales, and finance departments, respectively.

With regard to the operating department he says:

To my mind the department of prime importance is the operating department. An operating department which does not have the proper information is absolutely at sea. The head of the operating department may know that his product is costing too much money but he cannot put his finger on the leak. The only way that he can gather any information is through conversation with his foremen, or possibly the mine superintendent. These men are nearly all practical men, and as a result of their training and experience are prone to discredit figures and to rely on personal observation when they have to make decisions. Moreover, superintendents and foremen are not alone in taking this view. Many operators in this country are practical men who have come up from the ranks and who know the operating game from start to finish. It is always hard to convince such men that figures are more reliable than their own judgments. There have been many instances when practical men have positively refused to believe figures which were presented to them, although the figures were susceptible of proof. But, as stated before, conditions have changed and the operating men of today are depending more and more on statistics to guide them, with beneficial results, not only to themselves but to the whole industry.

The distribution of three classes of labor in a mine, namely, direct (mining), indirect, and maintenance and repairs is discussed in connection with pay-roll analysis.

In considering the use of figures from a distribution of labor such as outlined, it will be readily seen that the superintendent or head of the operating department has no control over the cost per ton of the first division of labor, mining cost, because the miners are paid at a certain specified rate per ton which remains the same irrespective of the quantity mined. However, he has a very decided control over the second and third divisions. The second division, or indirect labor, is the item where in most business concerns the greatest leaks occur. In this respect the coal mining industry is not an exception. The total of this division does not bear a direct relation to the amount of production. It varies to some extent with production, because the more direct labor you have, the more indirect labor must necessarily be done. But in some operations an increase of 25% can be made in the production without any appreciable difference in the cost of indirect labor. The indirect laborer must be ready to do his work when the coal comes up, and if sufficient coal is not coming up he waits until the coal is ready to move. This condition applies to practically all of the men grouped under indirect labor.

The distribution of supplies, and the royalties, depletion, depreciation and obsolescence are treated briefly.

The differentiation between capital and operating charges is not as difficult to make in the case of a mine and other enterprises

with wasting assets as it is in other lines of industry. In regard to charges to capital the author says:

All development work after the mine is a mine is a proper charge against the cost of operations. This statement is based on the theory that no charges should be made to capital account unless the expenditure either results in an increased production or decreased cost.

It will be noted that whether a charge is a capital or operating one depends a whole lot on when "a mine is a mine." On this point he adds:

Some people contend that a mine is a mine and that charges to capital should cease when you begin to hoist coal from the rooms. Others take the position that the mine is on a development basis until coal can be produced at a cost not more than the market price. The latter idea, I believe, is erroneous, because in periods of depression the mine may be fully developed and yet may not be producing coal at the market price. Another method which, in my judgment, produces more accurate results, is to assume that the development period is over when a mine reaches a certain percentage of the output which the engineers have planned for that mine. If this method is followed, the tonnage method of charging depreciation can be adopted, but it is necessary that all charges for new equipment or replacements should be made against operating cost.

The coal mining business is very hazardous as this quotation will show:

The risk of some unforeseen happening which will cause a loss, and against which it is impossible to insure, is always present. In the past operators have attempted to take care of this risk by having the sales department consider it in making prices, with the result that it was often ignored. The present recommendation is that a certain fixed amount per ton be charged into cost to cover this risk and be credited to a contingent reserve account. The credit balance in this account would represent the amount of premium paid for insurance if it were possible to get insurance. As conditions force the operator to carry his own insurance, he is perfectly justified in setting up such a reserve. No sane business man would attempt to carry his own fire insurance or his own compensation insurance without setting up some reserve, and the mining risk would seem to come within the same class.

Maintenance reserves are also treated. The author offers this advice to any accountant who may be called on to operate, instal, or change a cost system for a mining company:

In the first place, he must thoroughly familiarize himself with the practical side of the business, particularly from an operating standpoint. He must make up his mind which of the departments is going to make the greatest practical use of the cost system and plan his work so as to give that department the information it needs, as promptly as possible, and in the most serviceable form. He should not provide for securing any information unless he has a very well defined idea in his own mind as to the purpose for which that information is to be used and its value to the company. Finally, in making up statements showing the operation of the business and its condition, he should be careful to avoid the mistake that so many have made, and are still making, of grouping different classes of items under the same general heading. Statements have been used which have included under one head items properly chargeable against cost, items chargeable against income before net income is determined for taxation purposes, and items such as income and excess profits taxes, which must necessarily be deducted from net income.

At the conclusion of the booklet is an appendix prepared by the Research Department of the National Association of Cost Accountants. This appendix includes a summary of the main features of the uniform cost system of the National Coal Association, a summary of a system adopted by a number of Anthracite Coal Operators, and a brief note about two cost systems in the retail coal field.

Throughout the discussion there is a generous sprinkling of footnotes explaining certain technical terms peculiar to the coal mining business and footnote references to sections of the cost system of the National Coal Association which bear on or amplify points discussed in the main body of the text.

CHRONICLE AND COMMENT

THE BUDGET BUREAU

In response to several inquiries, *Administration* does not mind admitting very frankly that it did not know when it published "Economy in the New Administration" by Charles G. Dawes in its April issue, that the author of the article was to be selected to carry out this economy by President Harding. As this article was prepared by Mr. Dawes before his selection had been made to head the Budget Bureau, it is not to be taken in any sense as an authoritative statement as to present policies. It may be said, on the other hand, to express the general trend of some of the reforms to be undertaken.

After his appointment as Director of the Bureau of the Budget, Mr. Dawes issued an official statement. This statement rather than his contribution to *Administration* outlines the work he hopes to accomplish.

From this official statement by Mr. Dawes the following quotations are made:

> We all know the desperate condition of the business of the country at present—industrial, agricultural, and commercial—and that it is staggering under a tremendous burden of taxation from which it must be relieved if it is to properly revive. Congress has passed the budget law in order to give the President the machinery with which to secure the information necessary for him to direct the reform of Government business administration and save taxes.
>
> He asks me to become the Director of the Budget Bureau, whose first and most important duty under this law is to suggest an alternative budget—that is a more economical budget—for the fiscal year ending June 30, 1923.
>
> This alternative budget the President is directed to recommend to Congress on the first Monday of December. In other words, the President is depending upon the Budget Bureau, within a short time to make a survey of our vast governmental business activities and to suggest improvements therein, involving economies, with an estimate of their financial effect. The Congress convening next December must, in the ensuing six months, make the appropriations for the fiscal year ending June 30, 1923.

Mr. Dawes then asks the very pertinent question which follows:

> What has Congress done to give the Director of the Budget the machinery to attempt this colossal task?
>
> If we are to get any material relief, even so late as the fiscal year ending June 30, 1923, the work must be practically completed by December 1 of this year. He is given an appropriation of $225,000 for expenses and employees and an assistant in each department appointed by the Cabinet head. But from the $225,000 appropriation, besides the Assistant Director of the Budget, he can employ for this stupendous work only four men of his own selection at not over $6,000 each. For the rest of his force he is compelled to take his chances on men to be certified to him by the Civil Service Commission. One might as well be handed a toothpick with which to tunnel Pike's Peak. It is evident that if this, the greatest business crisis which our Government has ever confronted, is to be properly met chief reliance will have to be placed on something else than the pitiful machinery provided by law with which to exercise the wide powers extended to the Budget Bureau.
>
> I am, therefore, accepting the position of Director of the Budget only with the idea that the patriotism of the bureau chiefs and the country as a whole can be so aroused in this emergency that it will be met as was the emergency of war four years ago. Unless the bureau chiefs of the departments and the leading business men of the country respond to the call of the President as they did four years ago, the situation is hopeless so far as any material relief for two years is concerned from this source.
>
> In an emergency the conventional must be brushed aside. Contrary to rules of common sense and propriety in the ordinary situation of an incoming official, I must announce my program of inaugurating a budget in advance, because it can only be carried out by an appeal to patriotism. There is no reason why in five months a proper budget cannot be made if the bureau chiefs and American business men are made of the same stuff as were their sons in the last war.

Later in the statement, Mr. Dawes added:

> When the call came to me to take this place, I had the usual abhorrence of the thought of leaving private life to engage in such a task. Only the thought that if I declined the President's call in a time of business emergency like this, I would regard myself as a pusillanimous quitter for the balance of my life, led me to accept. If there is one of you, who, after enjoying the benefits of

great prosperity, success and prestige under the protection of a Government which you claim to love, declines to accept this call, except for reasons of life and death, your conscience will be cursed by the same conviction. However great the sacrifice, you will come. When the four months of your service is over, whether it is crowned by success or failure; whether the public praise or public criticism results, you will at least have been true to your country.

In the minds of the President, the Cabinet, the chiefs and the public there must exist an absolute confidence in the non-partisanship, impersonality, and disinterestness of the Budget Bureau which can never succeed properly, if it becomes involved in controversy, public or private, with the heads of the departments.

In Government business administration it is the eyes and ears, but not the fingers, of the Chief Executive. If it misconstrues its own functions and thereby becomes unnecessarily involved in controversies with the department heads, upon whom alone rests the duty of administration, it will fail. In proportion as it functions humbly, it will function powerfully, for the adoption of its suggestions by the President depends upon their reasonableness alone. My own connection with the bureau will cease after the first budget is made, provided the budget machinery is then operating efficiently. But whatever may be the time involved, I have made up my mind to stay with it until it is so operating, provided in the meantime I am not regarded as a failure by the President.

The crisis which confronts us all, as business men, is as great as that when the business community and all our people rose as one in the support of the Liberty loans. For the welfare of the nation, money had then to be spent; for its welfare now it must be saved.

It is a popular misconception that Congress is primarily responsible for the extravagant expenditures of the Government. For twenty years, including 1916, before we went into the war, there were only two years when Congress did not reduce the appropriations asked for by the uncoördinated departments of the Government. In the last two years they have cut down the appropriations requested by the departments by billions of dollars. It is Congress which has created the Reorganization Committee and the Budget Bureau in order to give the President and Congress the information necessary for them to meet the existing emergency.

I wish to call attention to the fact that the Budget Bureau is only the agency provided by Congress for this work. Of equal power and perhaps of greater importance is this great Congressional Committee headed by Walter Brown. In its work of recommending methods of consolidation, reclassification and coördination of the Government's business system it is working along the same lines as with the Budget Bureau. Without its coöperation the Budget Bureau cannot properly succeed. It is my great hope that the Budget Bureau may deserve its confidence and that our work may proceed in close contact and mutual understanding with them.

Mr. Dawes is no "pusillanimous quitter." Some men than do more with a "toothpick" than others can with the largest steam shovel ever built by the Marion Steam Shovel Company and with the finest electrically operated unloader ever constructed by the Brown Hoisting Machine Company.

ASPECTS OF ACCOUNTING

The editor of *Administration* has received the following letter from Lewis A. Oates, formerly General Auditor and Treasurer of the Cuban Northern Railways and now a public accountant in Habana, Cuba:

"The interesting article on 'Some Aspects of Professional Accounting' by Professor Esquerré which appeared in the July issue of *Administration* will probably receive the endorsement of a majority of the successful practicing accountants in the United States; but there are also many accountants, especially, and naturally, of the younger members, who will not agree with that recognized leader of the profession, in his tirade against the 'pirates' and the advertising accountant.

"Why he should dub a 'pirate' any person who, in order to make a living, generally honest, sometimes not quite so, raises the flag of 'auditor, accountant, systematizer' etc., is hard to say. It certainly smacks of complaint that he is poaching on the preserves of those already in the field. If, as the professor puts it, this person has been retired for incapacity, or if he is merely the theoretically finished product of a business college, without proper experience, it will not be long before his incompetence will find him out, or he will at best be limited to his proffered services on the ridiculous basis mentioned by Professor Esquerré, and quoted. no doubt, from actual fact, for a class of work which would not interest the qualified man.

"I quite agree that a gullible public may be exploited by such incompetents, but such a condition is not by any means confined to the accountancy profession. Is it not a fact that in every profession, as in every business, there are charlatans who, some unconsciously, others maliciously, exploit those who are deceived into dealing with them? It surely cannot be denied that there are lawyers and doctors who are as fit to advise or prescribe for clients and patients as the students whom the Professor advises to sell suspenders, etc. In former years I was connected with a steamship line which carried a doctor on each ship, some of whom were worthy and skilful practitioners who went to sea from choice; but many were the unsuccessful, careless and generally unfit in their profession, incapable of correctly diagnosing a baby's colic, but fully qualified by certificates and degrees to practice medicine. The medical profession, which is somewhat older than ours, does not get a fit of apprehension because of this lower strata and the entry every year of additions thereto, but recognizes the physical law that 'water eventually finds its own level.'

"It is, however, on the subject of advertising where the greatest diversity of opinion will be found. I have read the arguments for and against, including the editorials of the organ of the American Institute of Accountants, and have discussed the matter with various public accountants, but have never been convinced that there is anything derogatory or unethical in 'hanging out the shingle.' One of the editorials in question affirms that 'the accountant's name at the foot of a published balance sheet is the most effective form of advertising,' but, how to get one's name on the published balance sheet, is the problem with the struggling young accountant.

"Needless to say, there are classes of advertising as absolutely unsuitable to a professional man as to certain businesses. It has been argued that one would look askance at a doctor who would go from house to house inquiring if there were any sick persons therein. Such a method is so obviously odious as to render the argument ridiculous. Apart from the advisability or otherwise of canvassing on the part of the accountant, I submit that Professor Esquerré's analogy of accountancy being to business what medicine is to the human body is not quite correct. Were we to wait until businesses got sick we would eke out a precarious existence except in a year like the present. The fact is that quite the contrary is the case.

"The auditor is very much more a part of the regular routine of business than are the lawyer and doctor. They are occasionally called in to *get* one out of trouble, business or physical, whereas the accountant is needed all the time to *keep* one out of trouble. He is therefore somewhat more justified in offering his services, provided he does so at the proper opportunity, and with tact, observing professional rules of conduct towards his confrères, than are his brethren of the other professions. For the same reason he should not be so severely censured if he ventures to announce himself in the newspapers or magazines. Even some reputable members of the older professions do not scorn to use these media of publicity by the insertion of a 'card' announcing their existence, or their specialties. And, incidentally, some of the very concerns which support the non-advertising attitude do not hesitate to take advantage of a change of name or address to rush into the newspaper columns advising their clients of such important events.

"It is easy for the already successful accountant to stigmatize as commercialism any form of advertising, and for members of the societies to make speeches at their conventions upholding the ethics of the profession, but, granted that a professional man, whether in accountancy or in any other sphere, should place his professional honor and integrity above financial gain, particularly *when these would clash*, it cannot be denied that those who take up accountancy do so partly from choice of vocation, and partly because they expect to make a fairly decent living out of it. Let us be perfectly honest in this matter and not adopt a hypocritical attitude and talk platitudes about the good we do and hope to do to the business world, without any thought for ourselves, calling commercialism any means one may use to rise to the plane of financial success, without

which no man, professional or otherwise, can render his best and most efficient service.

"The fact is that the various societies of recognized practitioners, instead of decrying this legitimate means of becoming known, at present undoubtedly abused by some of Professor Esquerré's pirates, could actually make excellent use of it to the advantage of the profession generally. Professor Esquerré asks, 'How can we expect a public, which has neither the time nor the inclination to learn the intricacies of our profession and its fine distinctions between legitimate and illegitimate, to have more respect for us. . . .?' The answer is simply—advertising, propaganda, educating that public to the real benefits and necessities of accountancy, and to the means of distinguishing between the qualified practitioner and the charlatan. But this education should be absolutely sincere, not merely an endorsement of those who may be members of such society, to the exclusion of those who are not, because there are many excellent accountants who have been unwilling to study specially for examinations, and even unable to pass, whilst there are others who can tack all kinds of magic letters to their names, who are hopelessly incapable of conducting an audit of importance.

"Another young profession, with admittedly legitimate claims, is that of osteopathy. Its institutes have found it necessary or advisable to resort to propaganda in order to show a public, predisposed to classify it along with astrology, occultism and what not, that it is a serious profession with worthy objects.

"It would seem, therefore, that the accounting societies and the Institute might advantageously change their stringent attitude towards the dignified advertiser, and even help with a little missionary work of their own to attain the desired recognition of, and respect for, the accounting profession.

"Respectfully

"Lewis A. Oates"

TRADE CONDITIONS

"Competition tending to further decrease prices will be one of the most important factors in the year ahead," according to Harold Foster of Kirk, Foster and Company, Philadelphia. At the Tri-state convention at Atlantic City, Mr. Foster said in part, to quote *The H-O Force*, house organ of the H-O Cereal Company Incorporated:

Worldwide conditions have contributed to an exaggerated mental perspective. The inflation of prices and financial values were not the only things out of line; our personal opinions and sense of values became distorted as well.

It took years to mark up commodities and now we are marking them down. This process will be assisted by competition, which will be keener than ever. The sooner American business realizes this and plans carefully on the basis of cost and quality, the better this country will be in its dealings with foreign trade. Our country is fundamentally sound; its productive capacity is infinite.

An encouraging sign is that many retail merchants who for a long time held out against price adjustments are now contributing their share to the task of getting back to normal.

The biggest part of the present depression is caused by a temporary poverty in foreign countries. One hundred million in Latin America, 800,000,000 in Asia and 300,000,000 in Europe are suffering from trade reaction and currency deflation.

If we can obtain or create an expeditious adjustment of our railway problems, wage adjustments in the iron and steel business and a seasonable production by growers and manufacturers of food products, a revival in business conditions can be experienced at home which will help overcome the local effects of the depression abroad.

TEAMWORK

Teamwork, from the first system of organization which marks the stages of advancement, to the present "factory or present-day system," is the pivotal point in success. *Life with the Lincoln*, house organ of The Lincoln National Life Insurance Company, believes that the starting point in teamwork is "getting the right attitude towards your work." After that the race is easy.

The team is made up of individuals, departments, divisions and finally as a complete organization—all working as a unit toward a common goal. It is the team idea that brings results.

It is not sufficient, concludes *Life with the Lincoln*, to be just a worker or even a conscientious or laborious worker. One must be a team-worker so that he may stand alongside of his fellow worker and tie up the work with the other man's.

AN ADV. FOR ADVERTISING

A new slant on advertising is given by the late Theodore N. Vail who built up the telephone service all over the country. About the time when he had placed the telephone on every inch of territory, he started in to advertise the telephone—to show its everyday usefulness and wide service to the people. He showed in the copy he wrote how the telephone could be used more effectively than a letter or a telegram, a personal call or a trip to another city. While this campaign was under way one of the board of directors, according to *How to Co-operate*, published by *Successful Farming* for merchants, salesmen, and farmers, approached Mr. Vail and said: "Vail, what's the idea of spending all the money in advertising instead of in dividends? Advertising is all right for things people don't know about—but everyone knows about the telephone."

"Yes," answered Vail, "everybody *knows* about the telephone. But they don't *think* about it enough. If I can make them *think* about it oftener, they will *use* it oftener."

THE LUNCH PROBLEM

To supplement the article in this issue of *Administration* by C. F. Carter on "Handling the Lunch Problem," the following is quoted from the *Wellsworth Life*, a magazine published by the American Optical Company:

The self service system is very simple as well as quicker than any other method. Just go down the aisle, pick up a tray, silver and napkin, then bread and butter and so on down the counter till you reach the checker who gives you a price check. Now you can either sit at the counter or take your tray out to the tables in the other dining-room. For some unknown reason we always enjoy sitting on a high stool at the counter. When you go by the cashier's desk, you pay him the amount on your check, the rest of the noon can then be spent in the recreation rooms where the men can play pool and the girls can dance, sing, read or do anything they please in their recreation room at the other end of the dining-room.

Pointers have been put up along the corridor leading to the central dining-room, so whether you enter through the employment department or through the telephone office all you need do is follow the finger to the box department and go up one flight of stairs. The central dining-room occupies the entire second floor of the north wing of the main building.

Every day a menu similar to the one below is posted throughout the factory so everyone will know just what there is to eat in the central dining-room. There is a wide variety of food offered and you will surely find something you like in this list of eatables. Below the menu is always a short verse or quotation written by L. H. Brigham which just "hits the spot."

. . .

Fresh vegetable soup, .05
Roast beef, mashed potatoes, string beans, bread and butter, .25
Frankfurts, potato salad, bread and butter, .20
Fried pork chops, mashed potatoes, string beans, bread and butter, .25
Desserts, .05 and .10
Coffee, tea or milk, .05

A FOLLOW-UP PLAN

A plan which *The BlueBird*, a magazine published in the interests of BlueBird Distributers and Dealers, gives as one under which a most successful BlueBird selling organization operates, is given in the paragraphs which follow.

The four principle units of the sales department are, a sales manager, a corps of salesmen, a continuous series of advertisements, and a prospect file.

"Take away from our combination of four units any one unit and the balance of the department will cease to function," says *The BlueBird* in explaining this plan. To quote more of the details:

In this well-oiled machine the sales manager has very specific duties. He is in complete charge of the salesmen and the advertising campaign. He assists the salesmen in closing prospects, if the salesmen experience difficulty in doing so alone. He checks all salesmen's reports. Every Saturday morning at 8 o'clock he holds a salesmen's meeting. The sales manager acts as

teacher. At these meetings every salesman is given an opportunity to express his opinion and ask questions. In answering questions, the advice of other salesmen is often solicited.

The sales manager also takes up the troubles and difficulties that have been experienced during the week, particularly something unusual. These are discussed for the benefit of all. It is this school that puts into the salesmen the pep and energy that is needed by every successful salesman. At first the meetings were held at 8 o'clock Monday morning, but it was found that so many prospects wanted to get an early start on Monday morning demonstrations, that the time was changed to Saturday morning, which has been found satisfactory.

The third unit—the advertising campaign—consists of form letters, newspaper advertising, and direct by mail folders. This is a subject big enough for a separate discussion, so will not be gone into in detail here, except to say that the advertising campaign is budgeted so that they know just how much is to be spent every week and how it is to be divided between the different forms of publicity. Continuity is the thing they demand above all else.

Now for the fourth and last unit in their campaign—the prospect file. The prospect card is made up in triplicate form and padded. There is a pink sheet, then a blue sheet, then a heavier white card. When they secure a good live prospect, her name, address, telephone number, if possible, and the source from which the inquiry came are noted on the card. Then the card, in triplicate form, is given to the sales manager, who separates the sheets and gives to the proper salesman the pink or original sheet. The sales manager retains the blue sheet for his own individual record. The white card goes into a filing cabinet alphabetically under the name of the customer.

A QUESTION BOX

Possibly attention may have been called to the fact that each week *The Eventually News*, employees' magazine of the Washburn-Crosby Company, prints questions asked by employees and answers the questions which were submitted the week preceding.

These questions cover everything connected with the plant, from the construction of a machine, to the management of the organization.

A typical question and answer is given below:

87. Why is a "Personnel Department" maintained?

Ans.—The Personnel Department is maintained to care for the interests of the persons or the "personnel" of the Plant. It endeavors to be of the greatest possible service in preserving the personal contact between management and employees, which has made possible the family feeling shared by all members of the Washburn-Crosby organization. Its function is to look after employment, health, payment of wages, insurance, *The Eventually News*, published weekly, the cafeteria, The Eventually Building & Loan Association, the bulletin boards and Safety First Campaign, the band and the Washburn-Crosby Athletic Association.

CORRECT ROUTING

A truck standing idle is not only failing to do what it was built to do, but directly or indirectly it is causing the executive to lose money.

"But lost time, due to inefficient routing," says *Service*, a magazine published by The Service Motor Company, "is worse than time lost while the truck is standing still, for bad routing means that you pay for gasoline, oil, and tires, as well as driver and overhead, to travel miles that could be saved by a little use of the 'think tank' before the truck leaves for the trip."

The requirements for individual businesses may differ but the principles of correct routing are the same. Here are a few plans which are being operated successfully by various concerns:

One concern, for instance, has a large map of the city, which has been divided into zones or districts. This map is hung on the wall in the office of the shipping clerk, to whom all delivery orders are sent as soon as they are received.

Each zone is numbered, and as soon as the order is received, the clerk looks up the street address to find the zone in which the delivery is to be made.

A tack is then put on the map at the point where the order is to be delivered, and at the same time the number of the zone is stamped on the back of the shipping tag for the order and also on the manifest.

These tags and manifests then go to the warehouse and packing departments. The tags are then attached to the individual orders and the manifests are separated by zones and kept in piles, one pile for each zone.

The lists for this particular firm close at three

o'clock each afternoon, and as soon as the last order is in, the clerk goes through the manifests for each district, and guided by the tacks on the map, lays out the day's route for the truck driver to follow when making the deliveries, and arranges the slips in order, with the last stop on top.

Working from a map this way enables the clerk to figure out the shortest and very best manner in which the various stops are to be made, and it is estimated that many miles of truck travel are saved in the course of a month.

The orders, in the meantime, have been put up by the packing clerk, and are sent to the shipping platform where they are piled according to the district numbers that are on the shipping tags.

When all the manifests have been sorted and arranged in zone groups, in reverse delivery order, they are sent to the dispatcher on the shipping platform.

In the morning each truck drives to the shipping platform, at a point in front of a pile of goods comprising one shipment. The truck driver is then given the manifests covering the orders in this shipment.

When the goods are loaded on the truck by the driver and his helper, they also are arranged in the same way as the manifests. In other words, the articles to be delivered last are the first to be loaded, so that as the load goes on, the last article loaded will comprise the first stop, and the manifests and load will automatically correspond.

The driver then places the slips in a clamp binder, and uses the addresses as they appear as his directions for the trip. The customer, after receiving each order, signs the slip which is returned to the shipping clerk as a receipt for the goods.

AN INDUSTRIAL CAMP

A large estate, which has been converted into "a Home, a Farm, and a Camp for Health and Happiness" has been secured by the New York Telephone Company as a rest home for telephone girls who may be convalescing from sickness or operations, or who may be "run down." *The Telephone Review* describes Sherwood Hall, as the house is called, as "a jewel in the Warwick Hills of Orange County, New York," where "girls will be offered a rest in the quiet atmosphere of the ultra-pleasant surroundings of this latest feature in our personnel work."

On the property with the Hall a vacation camp will be built for employees who wish to spend their summer vacations in the country. This camp is not a part of Sherwood Hall.

The house is named Sherwood Hall in memory of the late vice-president of the company.

BANK STATEMENTS

The following letter has been received by the editor of *Administration* from S. C. McConahey, Treasurer of the Westinghouse Air Brake Company:

Dear Sir:

Although my reading has been quite casual I have been much impressed with the character and quality of the magazine *Administration* and the effort that the Ronald Press Company is making to forward business education and analysis.

During the last two or three years I have been impressed particularly, on numerous occasions, with the desirability and even necessity in a large measure of having the rank and file of our citizenship understand business processes and statements. To briefly illustrate what I am thinking about I enclose a copy of a letter just written the Corn Exchange Bank of New York City.

I am wondering whether it might not come within the province of your excellent journal to develop the suggestion to business executives that much might be accomplished in the direction of the broader business education of all our people if some time and trouble were taken to issue business statements, particularly of industrial corporations, which might be easily understood and self-explanatory not only to business men but by the "run of mine" of stockholders and employees.

Very truly yours,
(Signed) S. C. McConahey,
Treasurer.

The letter mentioned in the preceding communication is as follows:

The Corn Exchange Bank,
New York City, N. Y.

Gentlemen:

Referring to your statement of July 1, 1921, as advertised in *The Wall Street Journal* of July 29, 1921, I cannot refrain from commenting favorably upon the idea evidently back of this out of the ordinary presentation of a bank statement. Undoubtedly one of the urgent needs of our time is a wider education of the mass of people in regard to business and its processes and

every effort on the part of business executives (who interpret statements as an engineer does blue-prints) to make facts and figures elementary and easily understood is contributing something of value to this needed educational effort.

The only further comment we would make is that such an elementary exposition is, of course, much less essential to the readers of *The Wall Street Journal* than it might be to the readers of our numerous farm and labor journals; for example, *The American Federationist*, and others.

Congratulating you on the conception involved in this advertisement, I remain

Very truly yours,
(Signed) S. C. McConahey,
Treasurer.

The views of *Administration* coincide completely with those of Treasurer McConahey. In its issue for April 1921, *Administration* concluded its department of "Chronicle and Comment" with the following item:

The Corn Exchange Bank of New York City publishes its financial statement in such a way that almost anyone can understand it. For clearness it is a model which might well be adopted by all financial institutions in their reports for popular distribution.

Such a report can be printed on a little card which fits the vest pocket.

Omitting the dollars and cents, the report of the Corn Exchange Bank reads:

The Bank owes to Depositors . . . .
A conservative banker always has this indebtedness in mind, and he arranges his assets so as to be able to meet any request for payment.

For this purpose we have:

I. Cash . . . .
(Gold, Bank Notes and Specie) and with legal depositories, returnable on demand.

II. Checks on other Banks . . . .
Payable in one day.

III. U. S. Government Securities . .

IV. Loans to Individuals and Corporations . . . .
Payable when we ask for it, secured by collateral of greater value than the loans.

V. Bonds . . . .
Of railroads and other corporations, of first quality and easily salable.

VI. Loans . . . .
Payable in less than three months on the average, largely secured by collateral.

VII. Bonds and Mortgages and Real Estate . . . .

VIII. Twenty-two Banking Houses . .
All located in New York City.

Total to Meet Indebtedness . . . .

IX. This leaves a Surplus of . . .
Which becomes the property of the stockholders after the debts to the depositors are paid, and is a guarantee fund upon which we solicit new deposits and retain those which have been lodged with us for many years.

WOMEN'S BANKING DEPARTMENT

Great interest is being manifested, according to *Bankitaly Life*, the house organ of the Bank of Italy, San Francisco, in what represents an innovation in banking business on the Pacific coast. In its new building the Bank of Italy has established a Women's Banking Department which is designed to meet the growing needs of women in the business world.

Everything has been arranged so that the women "in a large department, feminine in its furnishings and adornments, may enjoy a regular banking service of the most approved modern type, including the opening of checking and savings accounts, the placing of investment loans, trust funds and other financial transactions."

A feature of unusual interest and value will be the organization of educational classes, under the personal direction of Mrs. Edward Dexter Knight, Director of the department, where the women will receive instruction from expert financiers on subjects ranging from the simple processes of making out deposit slips and keeping check stubs through the more intricate phases of banking and business transactions.

An all-round information bureau will be established, and in addition, a special service which will include confidential advice along the lines of household accounting, budgeting the family income, and the solution of many problems which confront a woman, both in the home and in the business world.

FOR BANK EMPLOYEES

Under the title, "Handy Guide to City Bank Club Activities," *Number Eight*, the

employees' magazine, lists the various innovations installed by the National City Bank of New York City in the interests of the employees.

The first is the City Bank club. It is described as:

> an organization of practically 100% of the staffs of The National City Bank, the National City Company, and the International Banking Corporation to which every employee is eligible. Membership, costing $1 a year, is paid by every employee.

The second is the Investment Fund. In the past 8% interest has been paid on employees' investments up to $1,000 in one year and $5,000 for any length of time.

The third is the *Number Eight* Realty Company, Inc. "Members may apply for co-operation in purchasing homes on a basis which enables them to pay over a period of from ten to sixteen years."

The Educational activity, with three subheads is the fourth innovation.

> The City Bank club will pay one-half of the tuition cost, exclusive of books and other incidentals, for any approved course in educational institutions in New York City for applicants meeting necessary requirements.

The second subhead under this general heading comprises extension courses. These include courses in Foreign Exchange and International Banking, Credit, and Bank letter-writing. They are available to persons whose work is connected with the subjects named, by special application.

The last subhead is the Scholarship Plan, by which 20 club members are selected by competitive examination to obtain scholarships—one-half in the New York Preparatory School and one-half in New York University, leading to the degree of Bachelor of Commercial Science at New York University School of Commerce.

The City Bank Institute for Boys is the fifth activity. This includes complete courses arranged for members, under 20 years of age, in education, recreation, athletics, and other allied fields.

The sixth item is the City Bank clubhouse where fifty men may get board and room for $55 a month and at the same time have the privilege of enjoying the social and recreational facilities operated at the house.

"Buy Direct Service" is the seventh listed activity. This service, located in the bank basement, is similar to a store, at which all members may buy at practically wholesale prices. The departments in the service are listed as follows:

> Household—where groceries and other things for the home may be purchased.
>
> Women's Wear—a weekly sale conducted for women where wearing apparel may be bought.

The Discount Plan is the eighth item which affords discounts from the regular retail price at certain stores for club members.

Number Eight is the ninth advantage. A copy of the magazine is given to each member of the City Bank club.

Any club member may take out a card in the New Fiction Library—the tenth privilege. The latest fiction can be secured from the Library at rates varying from 25 to 35 cents a week.

The twelfth, but by no means last, advantage is the City Bank club pin, worn by nearly every member of the club.

A vacation club, not unlike the Christmas clubs inaugurated by banks and industrial concerns, has been established for the employees of the National City Bank. *Number Eight,* National City Bank employees' magazine describes the plan. For fifty weeks the employees put a small sum in the club and then, at the end of the period, it is withdrawn with interest (provided, of course, that the deposits have been made regularly).

> The sum to be deposited each week is so small that it is not missed from the pay envelope, but the total at the end of the year is sufficient to pay the expenses of a mighty comfortable vacation.

In order to accrue interest on the savings, employees must make their initial deposits before June 20. There are three plans of savings; either fifty cents, one dollar, or two dollars a week. For complete payment on the fifty-cent plan, $25.50 will be paid back at the end of 50 weeks; $51 on the dollar a week plan, and $102 on the $2 a week plan.

A Vacation Bureau to assist employees

to find comfortable vacation spots has been installed at the bank. The Bureau is equipped with maps, rates, booklets, railroad routes, and rates of hotels and boarding-houses so that members who wish to take week-end trips can benefit by the bureau as well as those who wish to arrange for their whole vacation period.

REASONS FOR SLOW COLLECTIONS

An American business man writes to *The Morse Dry Dock Dial*, employees' magazine of the Morse Dry Dock and Repair Company as follows:

For the following reasons, I am unable to send you a check: I have been held up, held down, sandbagged, walked on, sat upon, flattened out, and squeezed—first by an Income Tax, the Excess Profit Tax, War Loans, War Bonds, War Savings Certificates, the Automobile Tax, and every Society and Organization that the inventive mind of man can invent to extract what I may or may not have in my possession. Also the Red Cross, the Children's Home, The Y. M. C. A., the Y. W. C. A., the Salvation Army, the Belgian Relief, the Australian Relief, the Black Cross, the Double Cross, and every hospital in the country.

The Government has governed my business so that I do not know who owns it. I am inspected, suspected, examined, and re-examined, informed, required and commanded so that I do not know who I am, where I am, or why I am here at all. All that I know is that I am supposed to be an inexhaustible supply of money for every known need, desire and hope, and because I will not sell all I have and go out and beg, borrow, and steal money to give away, I am discussed, boycotted, talked to, talked at, lied to, lied about, held up, hung up, robbed, and so near ruined, that the only reason I am hanging on to life is to see what will happen next.

BUSINESS CONDITIONS

"Business today, in spite of current gossip to the contrary, is rolling along at a pace only 20 per cent slower than one year ago," says *The United States Bulletin Service*.

In January, 1920, continues the writer, general sales amounted to $45,178,711,000. Business in January 1920 was considered to be good. In January 1921 the sales amounted to $38,506,907,000. This was 85.3 per cent of the amount of business done a year ago.

"Sales conditions in business are very much a state of mind," continues the article, "since the country is doing 85 per cent as much business in dollars as it did a year ago, is it not a regrettable fact that some organizations are idly waiting for a turn in business conditions?"

Bradstreet's commodity index shows a 43 per cent decrease in prices over the same period. These figures, therefore, indicate an increase rather than a decrease in the number of sales. Somebody is getting this business. Business—more business—is being done by some organizations than ever before, seems the natural conclusion.

THREE R'S OF SALESMANSHIP

A store has salespeople, says a merchandising expert in a recent book on retail selling, rather than mechanical means for serving customers because merchants feel the need of personal contact with their customers. The meeting is designed, the writer continues, "To accomplish three purposes: (a) to sell more of the store's merchandise; (b) to extend special courtesies and helps; (c) to create additional good-will for the store." "For all of these three objects," says *Pep*, house-organ of the LaCrosse Clothier Company, "salesmanship, good manners, tact, and energy are required."

"If they were not present, a nickel-in-the-slot machine would be better for the store, because it, at least, would not annoy or anger customers."

TESTS OF AN EXECUTIVE

What makes a good executive? Here is how H. Gordon Selfridge, head of Selfridge and Company, Ltd., of London, sums up the ideal qualifications of a competent executive in *The "A. C. L."* employees' magazine of the A. C. Lawrence Leather Company:

To do the right thing, at the right time, in the right way. To do some things better than they ever were done before. To eliminate errors. To know both sides of a question. To be cour-

teous. To set an example. To work for the love of work. To anticipate requirements. To develop resources. To master circumstances. To act from reason rather than from rule. To be satisfied with nothing short of perfection.

The head of one great manufacturing organization considers "constructive imagination and the faculty for sound planning" the greatest force in the executive.

Frank Waterhouse, president of Frank Waterhouse and Company, believes that resourcefulness is the paramount factor in the make-up of an executive. "The balance sheet and the income statement are," he says, "my test of an executive's ability. We set a task—what we think can and should be done. The man in charge handles the job in his own way, as long as the result is attained."

R. T. Crane, founder and president of the Crane Company says:

It is the first thing to make sure of when choosing those who will execute your orders and carry out the house policy and that is honesty. The business man takes honesty for granted in the requisites of a good executive. Fairness, however, and justice—two refinements of honesty—occur to practically all business men in the choice of an executive.

The ability to choose and train men; the ability to lead; and, not less important, the knack of influencing others, not under his authority, to do as he wishes—these are the great and final tests of an executive.

LIFE OF MOTOR CARS

What is the average life of an automobile? *The Kant Slip* published by the Kelly-Springfield Tire Company, believes that as highway transportation develops and passenger cars and trucks become practically the sole means of road travel the proportion of first purchasers of cars and trucks in the total of car sales will decrease, according to *Scientific American* and the demand for new cars each year will become more and more nearly equal to the number of cars which drop out of service.

The average life of the 2,000,000 cars retired from service in the last seven years was about 5.3 years each. This conclusion is based upon an analysis of registration, production, export and import figures over a period of years.

THE HELPING HAND

To encourage employees to help out newcomers in the work, the Joseph and Feiss Company offers bonuses.

Clothcraft, published by the employees of the company publishes monthly the winner of the awards.

When a new hand comes to an operation, an older operative may be designated as sponsor for that worker. She gets a place next to the new employee so that she can watch her, encourage her, and give her helpful hints which will mean progress.

This help is only supplementary to the work of the training school and the regular instructors which the plant maintains to teach novices the trade. While the school can teach the mechanical work it cannot acquaint the newcomer with her fellow-workers and make her feel that she is welcomed into the organization.

For this reason the sponsor's friendliness is valuable in making the newcomer happy in the new work. The sponsor may even take out time with pay if necessary in order to be of assistance to her charge.

When the new operative's output averages 80% of the operation for five consecutive work-days, the sponsor is paid $3. A regular teaching bonus of $5 is given when the operative makes 80% for five consecutive days by or within the time required by her expectancy. A special teaching bonus of $3 is awarded when an operative who has reached 80% reaches standard for five consecutive days.

This new plan, says *Clothcraft*, not only gives an operative a chance to earn as much as $8 for being a sponsor, but also gives her valuable training in the important work of factory instruction.

MARKETING FACTS

"A real survey of the market conditions affecting any particular line or piece of merchandise will give the basis of any understanding of the public thought and interest in the subject. Rightly used, a good survey can be very profitable," says *Hopping To It*, house-organ of the Hop Service, Inc.

The prime function of a good survey, continues the writer, is to prevent us from swallowing some of the good-looking selling and advertising campaigns that do not work. A survey is a cold-blooded exposition of what ideas have worked and what ideas have failed.

By gathering all the facts, opinions, prejudices, and preferences that can be extracted from the minds of the dealers, users, consumers, or whoever else may be interviewed, important results develop that often do not relate to any question the interviewer would think of asking. If the assemblage of these facts is absolutely accurate, certain generalizations can be made, which, in an advertising or selling campaign, are exceptionally helpful.

CAFETERIA COMMUNITY CENTER

The cafeteria in the Washburn-Crosby Mills has become sort of a community center for the mills. Moving pictures are held there and weekly classes and committees meet in the cafeteria for discussion or instruction.

To celebrate its first birthday, the cafeteria in the mill will give itself a party. Music, flowers, and other decorations will be used to give the place a festive air.

EYE EXAMINATIONS

Every employee of The American Optical Company has his eyes examined before he begins his duties, no matter what they are. *Wellsworth Life*, the employees' magazine of the concern, gives two reasons for this required examination:

> First: To let each one know whether his eyesight is good or bad and to show him how much his vision may be improved with corrective lenses, to suggest to those whose eyes need correction that here is an opportunity to buy at very moderate cost a pair of glasses which will keep the vision more nearly normal, and which will prevent the discomfort of eyestrain and headache.
>
> Second: Our object is to compile figures so that other industrial plants will see the value of such eye examinations.

For the first four months of the year 1921 only 68 out of 393 people examined had normal eyes. This means that eight out of ten should wear glasses; while four out of ten who had glasses needed stronger or different types of glasses.

THE OPEN SHOP

The Houghton Pay Envelope is a message, sent monthly, from the executives to the employees of E. F. Houghton and Company. It is published "with the object of enabling the employees to understand certain things that they might not otherwise have an opportunity to understand." Contributions are invited from every executive or employee when they have "a thought worth while."

In the number of the pamphlet in front of the writer, "The Open Shop" as a policy and as a practice is discussed in full detail in simple, direct language. The article cites, by concrete example, the results of the open shop in industrial plants throughout the country in general and in New York in particular. The article is signed by the president of the company, Charles E. Carpenter.

Other articles in the little magazine discuss the policy of the organization in regard to callers at the plant, the filing department, what to do in case of fire, etc.

"WHY NOT NOW"

Any questions pertaining to the manufacture of flour and all its complexities, which the employees of Washburn-Crosby Mills wish answered, are taken care of in *The Eventually News*—employees' magazine of the plant.

In the back of the magazine, under the heading "Questions Answered," experts answer the queries of employees.

The questions are numbered and published each week. On the following week they are answered and a new list of questions asked so that the employees can discuss and think over the problems which confuse their colleagues.

In this way *The News* conducts an informal educational service in the milling industry giving the employees opportunity of receiving expert advice on the various steps in the manufacture of flour.

ADMINISTRATION

The Journal of Business Analysis and Control

OCTOBER, 1921

CHARACTER IN BUSINESS

BY JEREMIAH W. JENKS*

JOHN HAYS HAMMOND has lately stated that if the question were asked, "What are the essentials for a truly successful career?"—the natural answer would be that 75 per cent of these essentials are comprised in the word "character." He continues, "A man of character is honest, straightforward, conscientious, ambitious, persevering, and level-headed."

I suppose, however, that not only Mr. Hammond but most business executives have in mind, whenever the word "character" is used in such a connection, all of those personal qualities that give a man the reputation of being a business man of the highest type, and that we think fully as much of the methods that he employs in his business as we do of his personal convictions or personal beliefs. Looking at the question from that viewpoint, we may perhaps be quite specific as to business methods.

In considering economic society—the world of business—I am inclined to think that the greatest business sin is a lie, the greatest business virtue is truth.

Social relations, generally speaking, are dependent upon the confidence that one person can place upon another. This is especially true in all business relations. People may perhaps pass a pleasant evening together or enjoy social intercourse of a formal type without great confidence in one another's sincerity or uprightness, provided their manners are courteous and their acts tactful and obliging; but if the question is one of a business transaction in which commercial values are involved, absolute truth is the prime consideration.

It is extremely gratifying to note how the belief in the importance of accurate statements has strengthened within the last few years. Most of us can look back upon advertisements that we used to read which were so glowing in their laudation of the articles under consideration that well-informed persons knew that they could not be true.

A good deal of tolerance used to be shown for misrepresentation in advertising, but now every thoughtful advertiser and the leading advertising clubs all recognize the foolishness as well as the wrongfulness of misrepresentation in advertising. Indeed some of our newspapers and magazines go so far now as to make their own investigations in advance and to guarantee that

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goods purchased on the basis of their advertisements shall be as represented.

But the matter of misrepresentation covers not only questions of quality but also, when the matters have become those of business agreement, matters of time and of place as well. How many have been the difficulties that have arisen within the last few months from the so-called "cancellation of orders," a euphemism in fact in many cases for the deliberate violation of a contract or the failure really to tell the truth as regards one's agreements. Values in connection with goods have to do not only with the quality of the goods themselves, but goods have also a time value. They should be in hand at the time when they are needed, and most people have placed their orders for delivery at a certain time because the goods will be worth more to them at that time than at another. A failure to deliver on time brings about a business loss as genuine in its nature, if not so expensive, as a failure to deliver at all. Goods likewise have a place value, and a failure of goods to arrive at the place agreed upon brings a loss, in many cases even a complete loss of value. The rigid keeping of contracts then is a matter of truth in representation and in life that is a prime essential, if not *the* prime essential, in business.

We usually think of a man's character in connection with his personal traits, his ways of doing things. Is he prompt in making his decisions? Is he inclined to procrastination? Is he inclined when called upon for a decision or for action to "pass the buck," or is he willing to accept personal responsibility for his acts? More and more, as business develops in complexity, do we realize the importance of the willingness to accept responsibility on the part of men who are heading great enterprises, and more and more do we realize the great importance of so organizing a business that for every business act some individual may be held directly responsible. It is probable that the next great step forward in business method will be taken by those who develop to a much higher degree than is now the practice, the rule of so organizing their business that each individual, from top to bottom, shall be given a field of work for which he may be held individually responsible, subject to censure if he fails to accomplish his task whether from carelessness or laziness or lack of judgment, and entitled to reward for success accomplished by promptness and order and good judgment.

Character in the best business sense can best be developed, in fact one might almost say can *only* be developed, by the carrying of responsibility. When this fact is fully realized, we shall witness a decided change in the spirit and in many instances in the methods of carrying on business.

Perhaps the strongest indictment that can be brought against government management of business, especially when a government is organized under civil service rules, lies in exactly this question of personal responsibility and personal initiative. A government official under a civil service system is likely to have prominently in mind the keeping of his job rather than the efficiency of his work. From the days when Dickens wrote: "How not to do it was the great study and object of all public departments and professional politicians all around the Circumlocution Office," to our war-time execrations upon "passing the buck" at Washington, government officials have been noted for their unwillingness to make important decisions, if the responsibility could be passed on to another. Private employees, however, with the stimulus that comes from the expectation of rapid promotion pro-

vided the results of their work are good, and with the certainty of no promotion and the imminent possibility of a discharge if their work is not reasonably well done, are likely to show much more energy and initiative and in consequence to get results that are well worth while. Character in the proper sense is built upon responsibility.

But another manifestation of the modern successful method in business, likewise reflected largely in the character of the business man, is the way in which he renders service to those with whom he deals. Sharp practice in business does not pay. Selfishness in business is not enlightened self-interest.

I recall the case of a business man who in purchasing a strip of land insisted upon an interpretation of the words of the deed which he knew was contrary to the intention of the seller but which, owing to a slight ambiguity in the words used, might well have appeared the more plausible interpretation to people not conversant with the facts. He knew that he was indulging in sharp practice at the expense of a neighbor who had tried to be accommodating. The result, however, when he attempted further negotiations on matters of vastly greater importance to him, was that he had destroyed all confidence on the part of the seller and that further negotiations had to be conducted, not primarily on the basis of personal accommodation, but strictly on the basis of personal advantage. The three or four feet of land that he had tried to gain by his sharp practice lost for him a far more important deal which otherwise he might easily have made.

I recall also the tale told me by the head of a large department store whose motto is: "The customer is always right." He had known ladies to take garments home to try on, who would wear them in the evening before returning them to be exchanged. Some boldly asserted the gowns had not been worn. Such customers soon became known, however, and the ultimate result was not to their benefit.

The person whose success is in the end certain to be the most pronounced is the one who takes the long view, who thinks less of his own immediate reward and more of the service rendered to "the other fellow." Good service and good-will are the main factors in building up a permanent clientèle for any business man. "The other fellow" means, however, not merely the man to whom you are selling, or the one from whom you are buying, or the wage-earner who is under your direction, or the employer whom you may be serving. He may be any of these or he may be the very intangible and even multitudinous personage whom we speak of as "the people" or as "the public." There is such a thing as a combination of employer and workman against the interests of the public, or of special agreements in individual cases between dealers and special customers against the interest of the rest of the people. The system of reasonably fixed prices and other business methods that consider the public will be not only for the benefit of the community but in the long run for the benefit of the dealer. The "higgling of the market" is passing.

While truth and service are fundamental in method as well as in character, courtesy and good nature are also essential to the highest success, provided the smile and the bow are not merely matters of formal action but are the outward expression of the inner feelings of the heart, provided they are matters not of form but of character.

AN ANALYSIS OF TURNOVER

HOWELL H. REEVES *

A RETAIL merchant wants to know whether his business is headed toward success or failure. In order to be sure of this, he must keep certain tabs on his business. He must have information on the movement of goods in and out. It is this movement in and out, not only of goods but also of that which the goods represent, namely, money, to which the term turnover has been applied.

In a retail business there are two things that are disposed of, replaced, and disposed of again, or in other words "turned over."

1. The stock or merchandise.
2. The money invested in merchandise.

The number of times these things are turned over in a specified period of time is the "rate of turnover." It is a rate because the element of time has been introduced. In this discussion, however, the word "turnover" will be used as synonymous with the "rate of turnover."

The turnover of these items has a very definite effect upon the profits which a merchant makes during a given period of time. An analysis of this effect is necessary in order to plan properly and conduct a business so as to:

1. Secure the maximum profit with a given capital or
2. Secure a given profit with a minimum capital.

If a retail merchant did not need any equipment with which to carry on his business except the goods themselves and the money invested in the goods, these two conceptions of turnover are all that would be necessary to fully analyze the business. But he needs other equipment such as a store, counters, shelves, chairs, delivery wagons, etc., depending upon the character and policy of his business. Consequently he has capital invested in these things as well as in merchandise and it is sometimes desirable to express the turnover of the:

3. Capital invested in the business.

Strictly speaking the entire capital invested in the business does not turn over, that is, it is not disposed of, replaced, and disposed of again. Only that portion invested in the goods or

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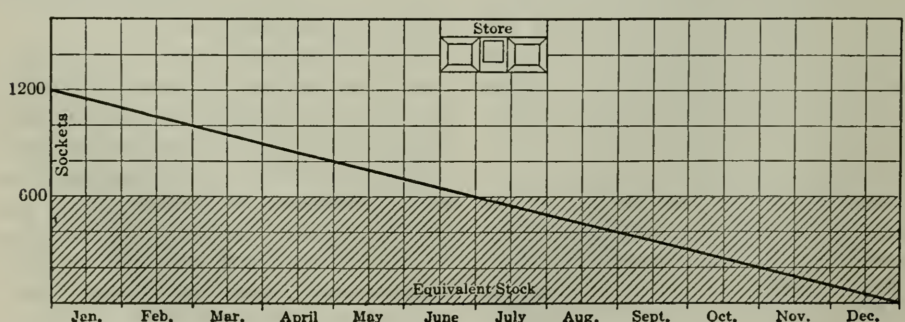

FIGURE 1. SHOWING STOCK CONDITIONS

merchandise goes through this cycle and yet it is oftentimes desirable to express the rate at which the entire invested capital is replaced through sales. Consequently we speak of the turnover of the capital invested in the business.

Turnover is usually considered on a yearly basis and this conception will be adhered to in the following discussion.

With this idea in mind the turnover of the stock or merchandise may be found by dividing the yearly sales, expressed in quantities or articles, by the equivalent stock.

By equivalent stock is meant a constant *yearly* stock which is equivalent to the actual stock over a period of one year. In Figures 1 and 2 the actual stock conditions are represented by the solid lines and the equivalent stock conditions by the shaded areas. The areas under the heavy lines are equal in each case to the shaded areas which have constant values throughout the year.

This means that the equivalent stock must be expressed in terms of time as well as of articles. The unit in which equivalent stock is expressed is the article-year. It may also be expressed in units which have a definite relation to this, such as article-month or article-week. These are reducible to the article-year which is the fundamental unit so far as the consideration of stock turnover is concerned.

For instance, four fans in stock for three months would be equivalent to one fan in stock for one year, or one fan-year.

Stock turnover is expressed by the following equation:

$$1.\ \text{S.T.} = \frac{\text{Yr. Sales}}{\text{E. Stock}}.$$

The turnover of the merchandise investment may be found by dividing the yearly sales (net) expressed in dollars, by the equivalent merchandise investment.

By equivalent merchandise investment is meant a constant *yearly* investment in merchandise which is equivalent to the actual merchandise investment over a period of one year.

As in the case of equivalent stock this means that the "equivalent merchandise investment" must be expressed in terms of time as well as of money. The fundamental unit in which equivalent investment is expressed is the dollar-year. It may be expressed in some related unit which is reducible to dollar-years such as dollar-months or dollar-weeks.

In Figure 3 the shaded area represents one dollar-year and the other areas inside the solid lines show various equivalents of the dollar-year.

One dollar invested for one year is a dollar-year. Two dollars invested for six months or three dollars for four months or fifty cents for two years are

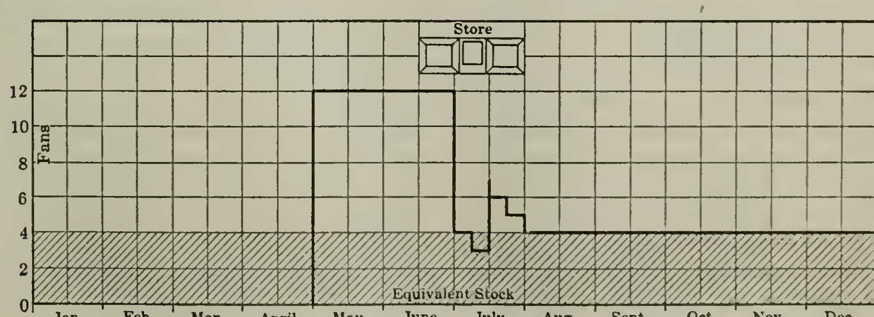

Figure 2. Showing Stock Conditions for Fans

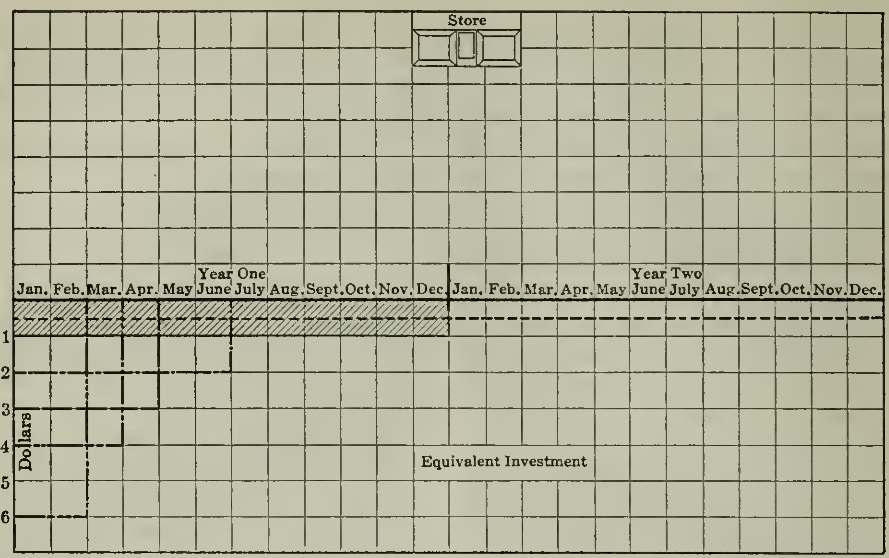

Figure 3. Chart of the Dollar-Year

also exact equivalents of a dollar-year.

If a business shows a constant investment of one dollar for one year, the average investment is one dollar over a period of one year or the equivalent investment is one dollar-year.

The average investment must not be confused with the equivalent investment, for example: If a business shows an investment of two dollars for six months, the average investment is two dollars over a period of six months but the equivalent investment is one dollar-year.

Merchandise investment turnover is expressed by the following equation:

$$2.\ \text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}}.$$

The turnover of the total capital invested in the business is found by dividing the yearly sales (net) expressed in dollars, by the equivalent invested capital.

By equivalent invested capital is meant a constant *yearly* investment equivalent to the actual investment in the business over a period of one year.

As in the cases of stock and merchandise investment, the "equivalent invested capital" must be expressed in terms of time (as time enters into their definitions) as well as of money.

The fundamental unit in which equivalent invested capital is expressed is the dollar-year.

The invested capital turnover is expressed by the following equation:

$$3.\ \text{I.C.T.} = \frac{\text{Yr. Sales}}{\text{E. I. C.}}.$$

It is the equivalent invested capital together with the yearly sales and net profits which determine the standing of any business. Consequently, the equivalent value has been used in all of the equations.

The initial value of stock or of investment, or the value of these at any time during the year can be used if there is little or no fluctuation in the amount of stock or of investment throughout the year, in which case they would represent approximately the yearly average value.

If there is much fluctuation, how-

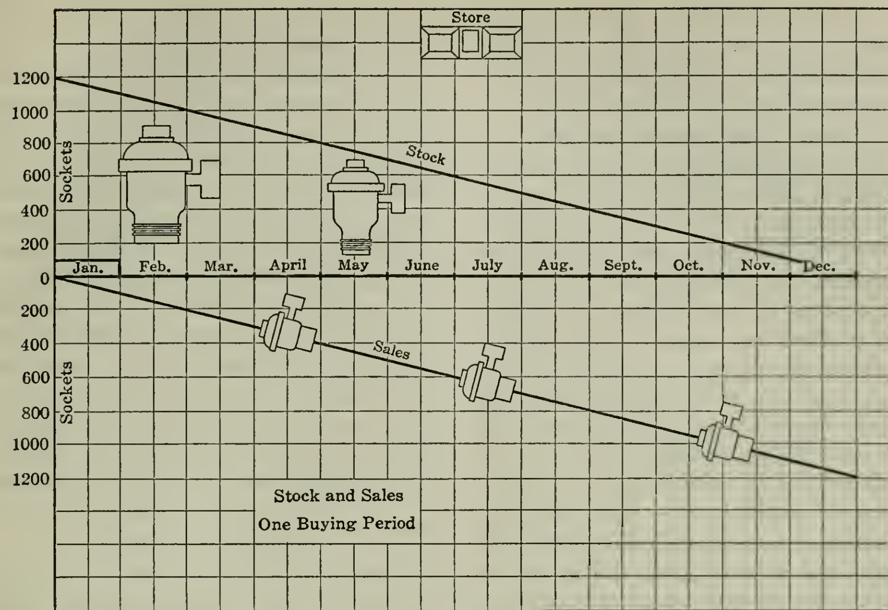

FIGURE 4. CHART OF STOCKS AND SALES FOR ONE PERIOD

ever, the equivalent value should be used, as the maximum or minimum values by themselves have very little effect on the general condition of the business and furnish no information as to whether the value selected represents the true average.

Since turnover is often used for purposes of comparison, this is another reason why the equivalent value should be used. While the fluctuations of business in a certain store may occur periodically, they may be different in value or may not coincide in time with those of other stores with which it is desired to compare the turnover.

The terms "equivalent stock," "equivalent merchandise investment," and "equivalent invested capital," were chosen purposely to avoid confusion with already existing terms.

If the true significance of these terms is grasped in the beginning, there will be no confusion in the discussion of the subject of turnover or in the solution of any turnover problem.

The use of the term "average" in the present methods of figuring turnover is probably responsible for much of the confusion that now exists in the discussion of this subject as "average" is not inherently tied up with any definite element of time.

On the other hand, "equivalent stock" has been defined as a constant yearly stock which is equivalent to the actual stock over a period of one year.

"Equivalent investment" is defined as a constant yearly investment which is equivalent to the actual investment over a period of one year.

Any one of the three types of turnover is easily found by plotting the sales, and stock or investment values, for the year.

The sales curve is a cumulative curve, that is, any point on the sales curve represents the total sales from the beginning of the year.

Any point on the stock or investment curves, on the other hand, represents the actual stock or investment

at that particular time. Consequently the area under the stock or investment curve represents the equivalent value of stock or investment.

Suppose 1200 sockets are placed in stock at the beginning of the year and these are disposed of gradually throughout the year. The stock condition and sales are represented by the sloping lines in Figure 4. The stock and sales (expressed in quantities or articles) are plotted on opposite sides of the base or zero line. A drawing of a store is shown at the top of the chart. An increase of stock means goods coming into the store and the stock curve is shown rising towards the store when stock is replenished. Sales of merchandise means goods going out of the store and a decreased stock, so the sales curve recedes from the store, as does also the stock curve, as the stock decreases. The number of sockets in stock at any particular time can be read directly from the stock curve. The total sales from the first of the year to any given date can also be read directly from the sales curve.

For instance, on May 1, there were 800 sockets on hand and the sales up to that date were 400 sockets. The equivalent stock for the year is indicated by the area under the stock curve. The area enclosed by the small rectangle in the lower left-hand corner represents 100 socket-months, that is, 100 sockets in stock for one month. The total area represents 7200 socket-months, or dividing by 12, the number of months in a year, 600 socket-years. Then, as the yearly sales indicated by the sales curve on December 31, are 1200 sockets, the stock or merchandise turnover is $\frac{\text{Yr. Sales}}{\text{E. Stock}} = \frac{1200}{600} = 2.$

If 600 sockets were placed in stock at the beginning of the year and were disposed of at the same rate, the stock condition and sales would be shown by the curve in Figure 5. The yearly sales are 1200 sockets and the equivalent stock shown by the area under the

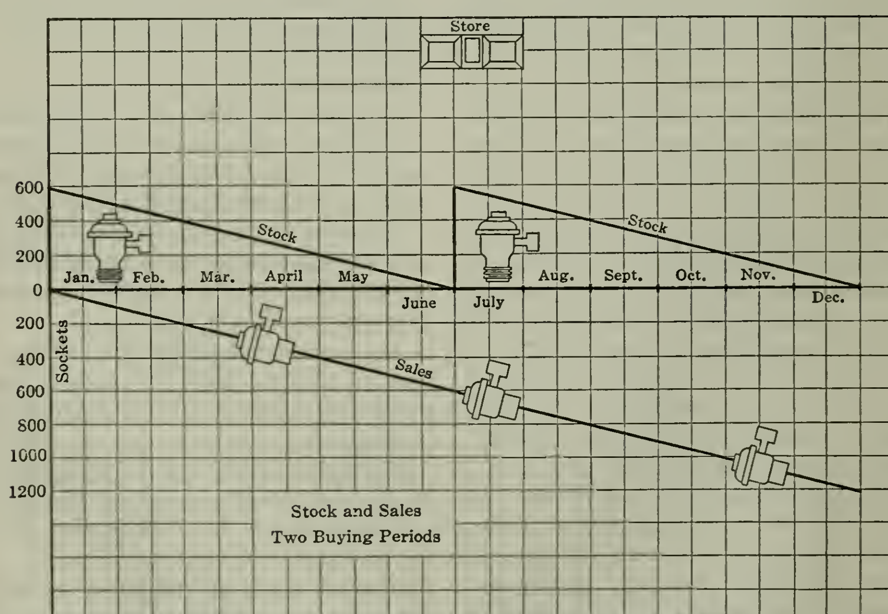

Figure 5. Chart of Stock and Sales for Two Periods

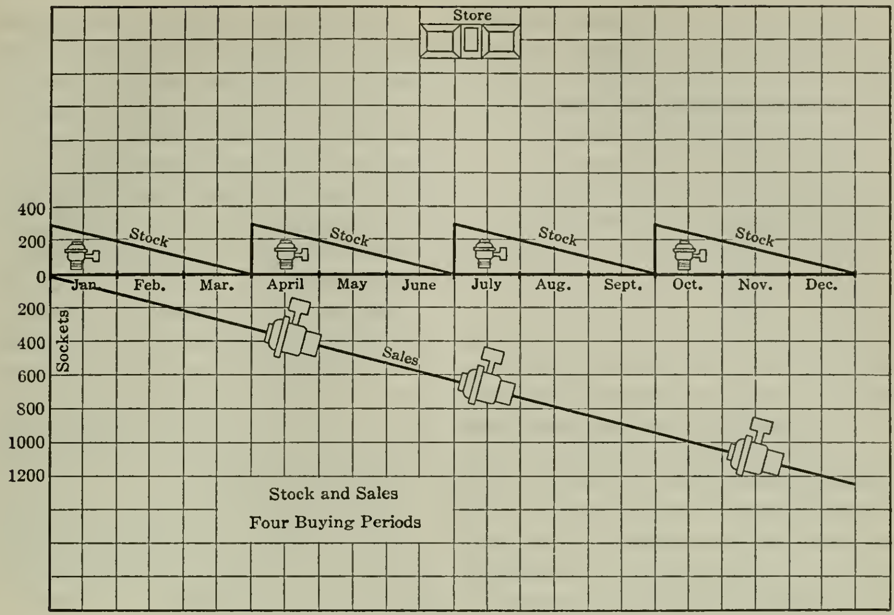

FIGURE 6. SHOWING ANOTHER CHART OF STOCK AND SALES

stock curve is 3600 socket-months or dividing by 12, the number of months in a year, 300 socket-years. The turnover of sockets is $\frac{\text{Yr. Sales}}{\text{E. Stock}} = \frac{1200}{300} = 4.$

But if only 300 sockets were placed in stock and were disposed of at the same rate, the stock condition and sales would be shown by the curve in Figure 6. The yearly sales are 1200 sockets and the equivalent stock shown by the area under the stock curve is reduced in this case to 1800 socket-months, or dividing by 12, the number of months in a year, 150 socket-years. The turnover of sockets in this case is $\frac{\text{Yr. Sales}}{\text{E. Stock}} = \frac{1200}{150} = 8.$

The curve in Figure 7 might represent a dealer's fan business. It shows a purchase of twelve fans on the first of May. No sales are indicated for two months; then, possibly as the result of a very hot spell, eight fans are sold leaving four in stock. One week later another fan is sold as indicated by the sales curve, leaving three in stock. On July 15, four fans are placed in stock but one is sold on the same day thus leaving not seven fans, but only six fans in stock. One more fan is sold on July 21, and one on the first of August, leaving four fans in stock for the remainder of the year.

The equivalent stock represented by the area under the curve is 48½ fan-months, or dividing by 12, approximately 4 fan-years. The total sales, as indicated by the sales curve on December 31, amounted to 12 fans. The fan turnover then found by substituting these values in equation 1 is S.T. $= \frac{\text{Yr. Sales}}{\text{E. Stock}} = \frac{12}{4} = 3.$

The turnover of any merchandise or line of goods can thus be found by plotting the stock and sales for the year, ascertaining the equivalent stock by integrating or adding up the area under the curve and dividing the total or yearly sales by the equivalent stock.

In the first three examples considered, the sales were constant, namely, 1200 sockets per year. The equivalent stock and merchandise turnover varied as shown in the following table:

Example	Yr. Sales	E. Stock	No. of Buying Periods	S.T.
1	1200	600	1	2
2	1200	300	2	4
3	1200	150	4	8

It can be seen from this table that, when the total yearly sales remain the same, the stock or merchandise turnover becomes larger as the equivalent stock becomes smaller. In fact if the stock is cut in two the turnover is doubled, or if the stock is decreased to one-fourth of its original volume, the turnover is quadrupled. That is, the turnover varies inversely as the equivalent stock.

On the other hand if the equivalent stock remains constant, it is evident that the turnover will increase in the same ratio and directly as the sales increase.

The variation in the equivalent stock was coincident with changes in the length of the buying period. When the total yearly sales remain constant, the equivalent stock varies directly as the length of the buying period or inversely as the number of buying periods, consequently, the stock turnover varies directly as the number of buying periods.

The buying period is the length of time that elapses between purchases, where the rate of sales is constant, where the maximum stock values are the same, and where the minimum stock values reach zero at the instant of being replenished.

The above condition is ideal and seldom reached in actual practice but it affords a standard basis for comparing the buying periods of different lines of business.

The number of buying periods per year is found by dividing one year by the length of the buying period.

Where the maximum values of stock are the same, the number of buying

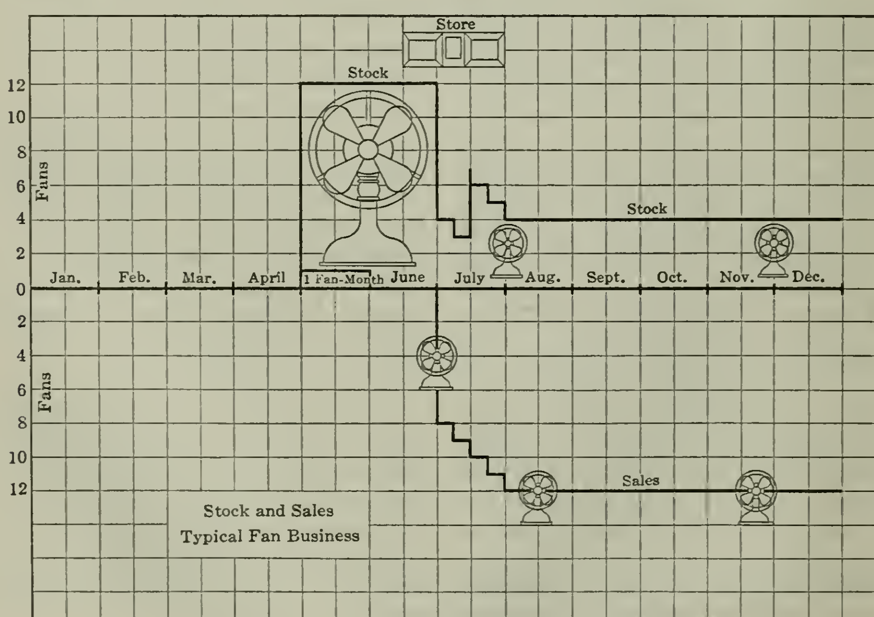

Figure 7. Graph of Typical Fan Business

periods can be found by dividing the yearly sales by the maximum value of stock. But as the maximum values are not always the same, it is necessary to define the number of buying periods in terms of some standard unit to which any shape stock-curve can be reduced. This, as has been shown, is the equivalent value of stock.

In the ideal case considered, the equivalent stock is numerically one-half of the maximum value, consequently

$$\text{B.P.} = \frac{\text{Yr. Sales}}{\text{Max. Stock}} = \frac{\text{Yr. Sales}}{2\text{ E.S.}}.$$

Since any shape stock-curve can be reduced to an equivalent value, this provides a method for finding the equivalent number of buying periods for any stock condition.

$$\text{E.N.B.P.} = \frac{\text{Yr. Sales}}{2\text{ E.S.}} = \frac{\text{S.T.}}{2}.$$

Recapitulation of the Laws of Stock or Merchandise Turnover

1. When the total yearly (net) sales remain constant, the stock or merchandise turnover varies inversely as the equivalent stock.

$$\text{S.T.} \propto \frac{1}{\text{E.S.}}$$

2. When the equivalent stock remains constant, the stock or merchandise turnover varies directly as the yearly sales.

$$\text{S.T.} \propto \text{Yr. Sales.}$$

3. When the total yearly (net) sales remain constant, the stock or merchandise turnover varies directly as the equivalent number of buying periods.

$$\text{S.T.} \propto \text{E.N.B.P.}$$

The items which affect the merchandise investment turnover are:

1. Buying Interval.
2. Profit.
3. Credit.
4. Quantity Buying Price.

Only the first of these had any effect on the stock turnover.

In analyzing the effect that these items have on merchandise investment turnover, we will consider them one at a time in order to avoid confusion.

Buying Interval. First, we will see that when the other factors remain the same, the buying interval has the same effect on the merchandise investment turnover as it does on the stock turnover.

For the present, then, it will be assumed that the business is done on a cash basis and that no profit is made.

Perhaps the dealer who bought the 1200 sockets at the beginning of the year paid 28½ cents a piece for them or \$285 a thousand. The 1200 sockets cost him 1.2 x \$285 or \$342; and, as before, were sold gradually throughout the year.

Since we are now concerned in plotting dollars instead of sockets and as the dollars invested in stock go out or away from the store, the merchandise investment curve is shown in Figure 8 leaving the base line in the opposite direction from the store when the money is being invested. As the investment is decreased by means of sales, the curve is shown decreasing in value and approaching the store. Since the sales increase, the sales curve is shown leaving the base line in the direction of the store, because sales mean money coming into the store.

The total sales from the first of the year to any given time can be read directly in dollars from the sales curve, being represented by the distance from the base line to the sales curve at that particular time. For instance, on April 15, the sales from January 1, had accumulated to \$100, as shown by the sales curve in Figure 8.

The amount of money invested in stock at any time can be read directly in dollars from the investment curve, being represented by the distance from the base line to the curve at the designated time. For instance, on April 15,

the investment is \$242 as shown by the investment curve in Figure 8.

The equivalent merchandise investment is indicated by the area under the investment curve. The area enclosed by the rectangle on the left-hand side next to the base line represents 100 dollars invested for one month or 100 dollar-months. The total area under the curve represents 2052 dollar-months or, dividing by 12, the number of months in the year, 171 dollar-years.

The total yearly sales indicated by the sales curve on December 31, is \$342. Substituting these values in equation 2, we find that the merchandise investment turnover is:

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{171} = 2.$$

This is the same as the stock turnover under similar buying conditions.

When the dealer bought the 600 sockets assuming that the quantity discount was the same, his investment was only one-half of \$342 or \$171 and the curves are as shown in Figure 9.

In this case the equivalent merchandise investment represented by the area under the investment curve is only 1026 dollar-months or dividing by 12, the number of months in a year, 85.5 dollar-years. The sales are the same as in the previous case, namely, \$342. Substituting these values in equation 2:

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{85.5} = 4.$$

In the case where 300 sockets were bought and sold four times during the year, the initial investment with the same quantity discount was only one-fourth of \$342 or \$85.50 and the sales and stock conditions are shown in Figure 10.

The equivalent merchandise investment is 513 dollar-months or 42.75 dollar-years. The

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{42.75} = 8.$$

The three examples may be tabulated as follows:

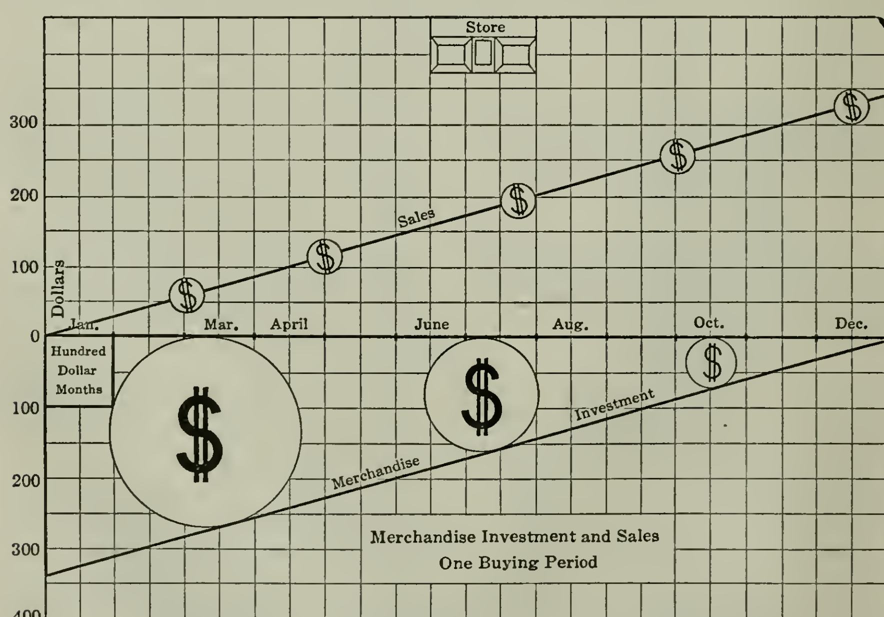

Figure 8. Chart of Investment and Sales for One Period

Example	Yr. Sales	E.M.I.	No. of Buying Periods	M.I.T.
1	$342	171 d-yrs.	1	2
2	342	85.5 d-yrs.	2	4
3	342	42.75 d-yrs.	4	8

The figures in this table show that when sales and the other factors remain the same, the merchandise investment turnover becomes larger as the equivalent merchandise investment becomes smaller. In fact, if the equivalent merchandise investment is cut in two, the merchandise turnover is doubled. Consequently, the merchandise investment turnover varies inversely as the equivalent merchandise investment.

The variation in the equivalent merchandise investment was coincident with changes in the length of the buying period. When the total yearly sales remain constant, the equivalent merchandise investment varies directly with the length of the buying period or inversely as the number of buying periods; consequently, the merchandise investment turnover varies directly as the number of buying periods.

To show the importance of allowing the stock to reach as low a point as possible, the conditions in Figure 11 will be compared with those in Figure 9. In Figure 11 the dealer has invested $256.50 in sockets at the beginning of the year, and at the end of six months he still has $85.50 invested. However, he buys enough to build his stock up to its original value and still has at the end of the year $85.50 in merchandise. The equivalent investment in this case is 171 dollar-years, consequently

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{171} = 2.$$

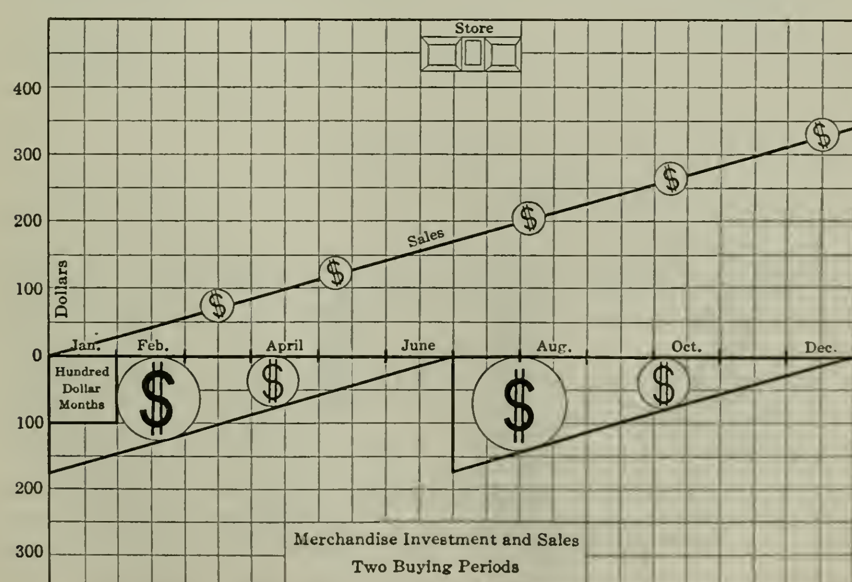

Figure 9. Chart of Investment and Sales for Two Periods

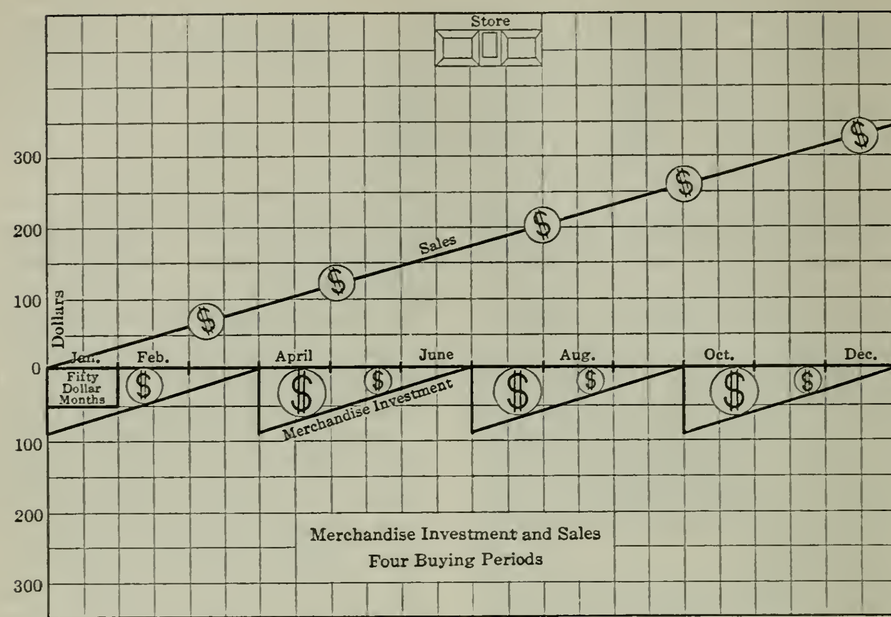

Figure 10. Investment and Sales Chart For Several Periods

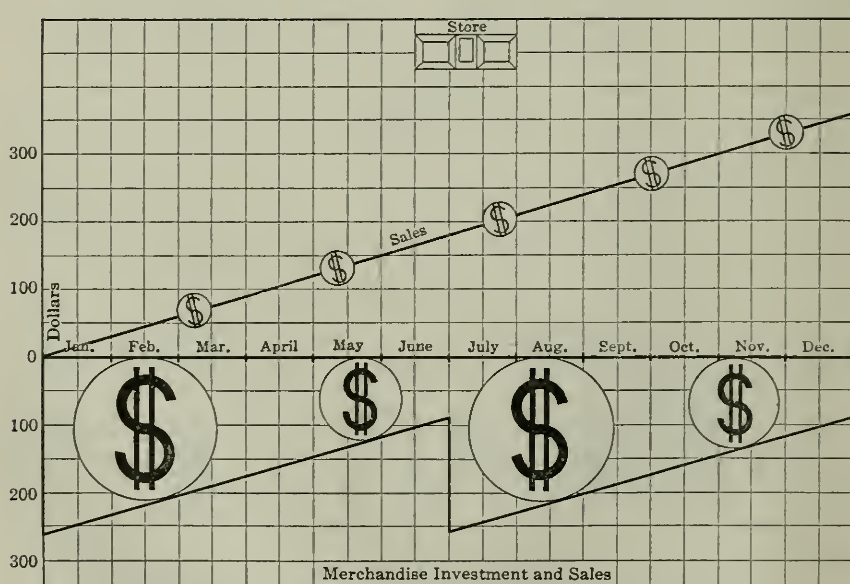

Figure 11. Chart Where Stock Reached a Low Point

This is just another proof that the merchandise investment turnover varies inversely as the equivalent merchandise investment. In Figure 9, this equivalent merchandise investment was 85.5 dollar-years while in Figure 11, it was 171 dollar-years. In the former case, the M.I.T. was 4, while in the latter it was 2. The equivalent investment was doubled and the turnover was cut in two. The buying period in both cases was the same.

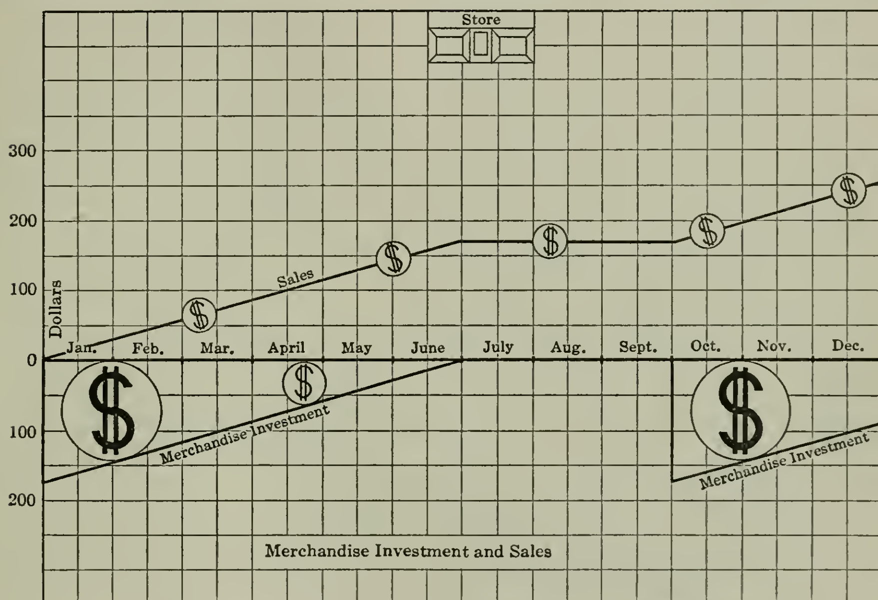

FIGURE 12. CHART WHERE DEALER WAS SLOW TO ORDER

A dealer, however, should not pursue the minimum stock ideal to such an extent that he finds himself out of stock for any length of time, for this cuts down his sales materially and may cut his merchandise investment turnover. Another objection is the bad effect on the trade because of the dealer's failure to perform his function.

In Figure 12, the conditions are the same for the first six months as they are in Figure 9. In the case represented by Figure 12, however, the dealer was slow to order perhaps, or at least could not get his stock replaced until three months had passed. During these three months, of course, no sales were made as indicated by the horizontal position of the sales curve. This makes the total sales for the year $256.50 as compared with $342 in the Figure 9 case. The equivalent merchandise investment indicated by the area under the two portions of the merchandise investment curve is 74.8 dollar-years as compared with 85.5 dollar-years in the Figure 6 case. In Figure 12 then, the

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{256.50}{74.80} = 3.44.$$

The turnover in the Figure 9 case was 4.

Profit. It seems to be the general practice to consider profit as a percentage of yearly sales (net). This method has its merits, certainly, and without stopping to discuss its logic, this conception will be adhered to in this discussion.

The dealer who bought 1200 sockets

at the beginning of the year and paid 28½ cents a piece for them or $342 for the lot may have decided that he wanted to make 25 per cent gross profit. This would mean that 28½ cents was 75 per cent of the selling price which he desired to establish. Then 1 per cent was $\frac{\$.285}{75} = \$.0038$ and 100 per cent or the selling price was 38 cents.

The yearly sales at this profit were $456 as the 1200 sockets were sold gradually throughout the year.

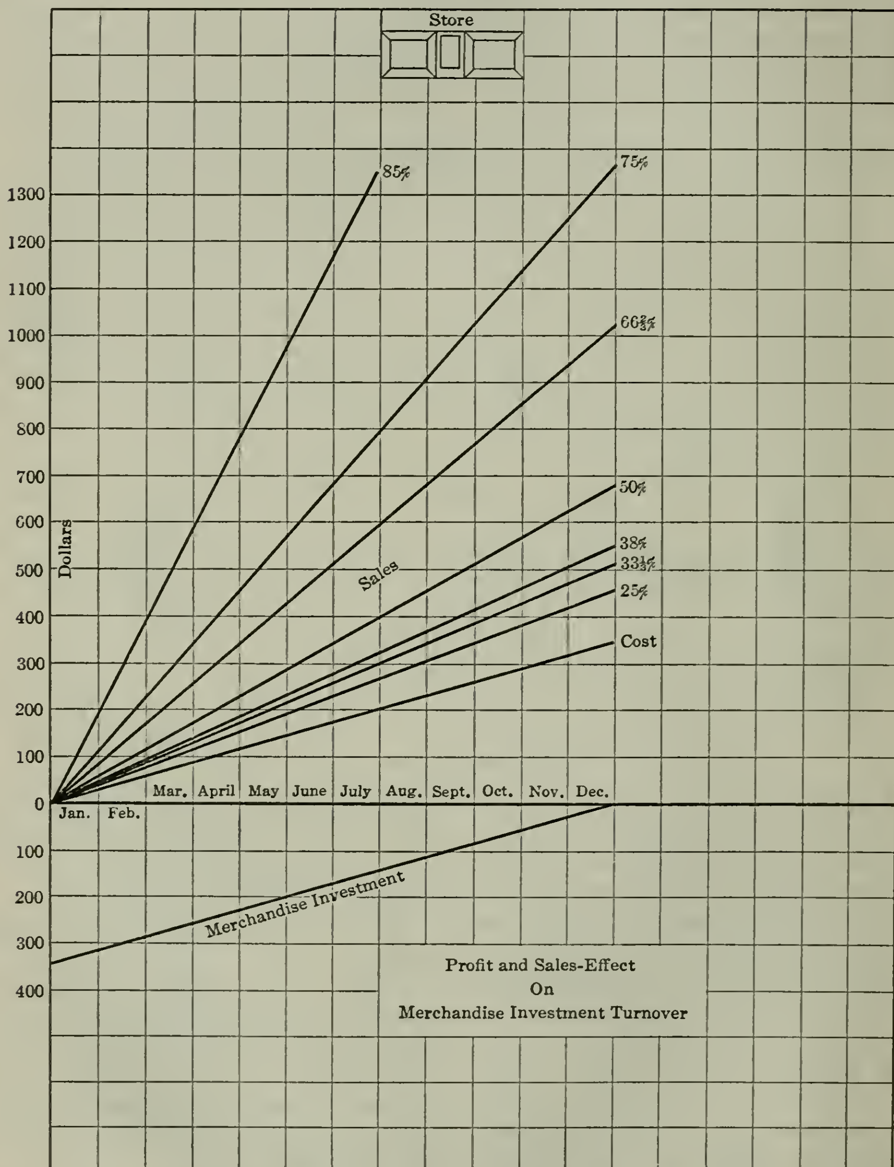

Figure 13. Chart of Profit and Sales-Effect

The sales and investment curves are shown in Figure 13.

The equivalent merchandise investment was the same as in Figure 8 namely, 171 dollar-years. So the

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{456}{171} = 2.66.$$

If the dealer had desired 33⅓ per cent profit, the yearly sales would be $\frac{\$342}{66.6} \times 100 = \$513$. Therefore the

$$\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{513}{171} = 3.$$

If he had desired 50 per cent profit, then $342, the cost of the goods, would be one-half of the required selling price which would be $684. As the equivalent merchandise investment has remained constant, the $\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{684}{171} = 4.$

The sales curves at various percentages of profit are shown in Figure 10 and the effect of the percentage of profit on the merchandise investment turnover is shown by the curves in Figure 14. For any variation in the percentage of profit, the percentage change in the merchandise investment turnover is the same regardless of the equivalent merchandise investment or the buying interval.

The figures from which two of the curves were plotted are as follows:

Cost of goods sold $342.
E.M.I. for M.I.T. #1 = 171 dollar-years.
E.M.I. for M.I.T. #2 = 44.75 dollar-years.

Per cent Profit	Yr. Sales	M.I.T.#1	M.I.T.#2
0	342	2	8
25	456	2.66	10.66
33⅓	513	3	12
38	552	3.22	12.88
50	684	4	16
66⅔	1026	6	24
75	1368	8	32
85	2280	13.33	53.3

2

The equation of the per cent profit turnover curve can be determined mathematically and as a matter of fact is $\text{M.I.T.} = \frac{200n}{100-p}$.

In this equation "n" represents the number of buying periods each year and "p" is the per cent of profit expressed as a whole number.

The equivalent number of buying periods per year can easily be found for any shaped sales and investment curves by taking n as ½ the stock turnover or as ½ the merchandise investment turnover at zero profit.

Three of the curves in Figure 14 were plotted by using this formula, and the two curves plotted from calculated results were checked by the formula.

The effect of the per cent of profit on merchandise investment turnover has little practical application in the planning or conduct of the business, for the profit is not the means to an end, but the end itself. It is well to know, however, just what effect an increase in the percentage of profit has on the turnover of the money that has been invested in goods for sale. Otherwise confusion might arise in comparing the merchandise investment turnover for different lines carrying widely different percentages of profit. For instance, a change from 66⅔ to 75 per cent profit (8⅓ per cent) means a 33⅓ per cent change in the turnover, while a change in the turnover from 25 to 33⅓ per cent profit (8⅓ per cent) means only a 12.8 per cent change in the turnover.

Credit. The extension of credit increases the amount of money invested in merchandise and with the same yearly sales it, consequently, decreases the equivalent merchandise investment turnover.

Consider the case illustrated in Figure 8 when the $342 worth of sock-

ets were sold gradually throughout the year. When sold for cash, the equivalent merchandise investment is illustrated by the area under the solid line in Figure 15. If 30 days credit, is extended, the equivalent merchandise investment is shown by the area under the dotted line.

Since it has been assumed that the business has been running on the 30-day credit basis on the first of January 30 days' sales had not been collected.

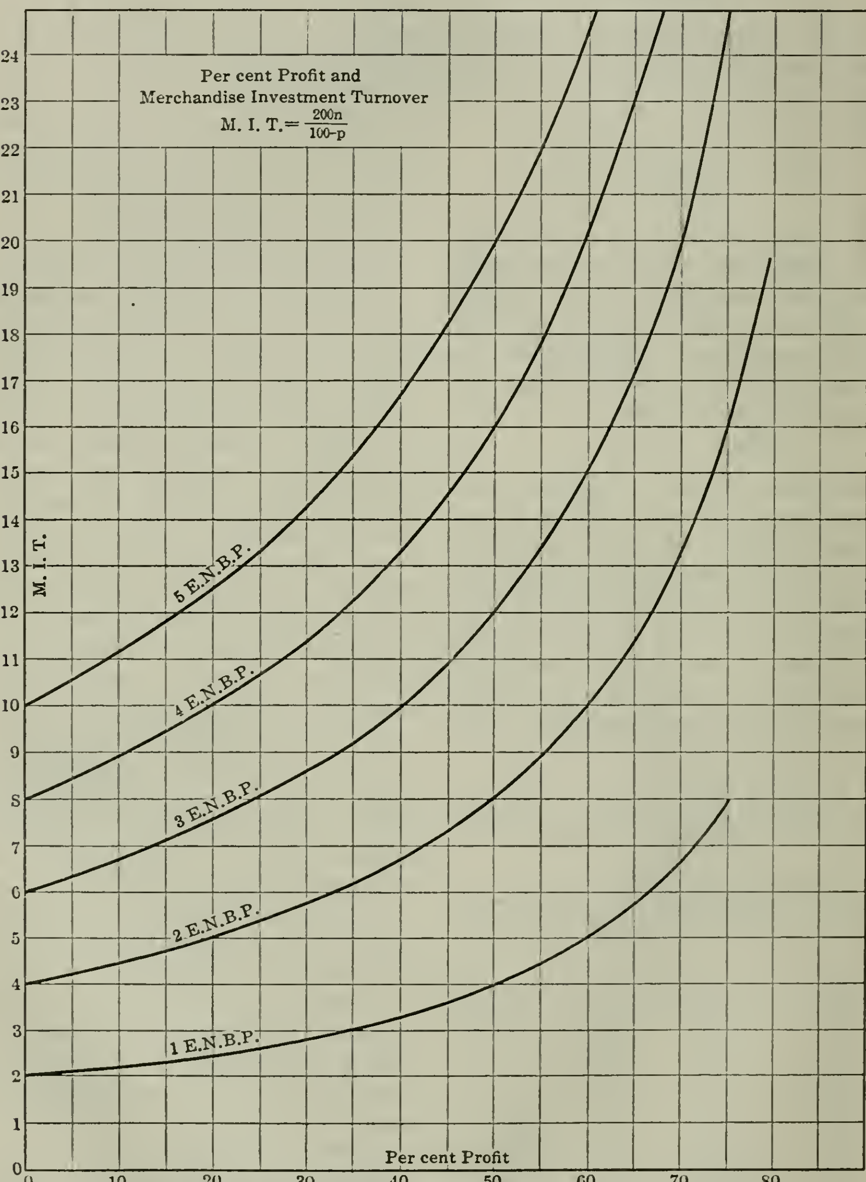

Figure 14. Curves Showing Percentage of Profit

The merchandise investment, then, on January 1, is $\$342+\frac{342}{12}$ or \$370.50.

The equivalent merchandise investment represented by the area under the dotted line is 2394 dollar-months or 199.5 dollar-years. We know from the case illustrated by Figure 8 that the equivalent merchandise investment on the cash basis is 171 dollar-years, consequently the extension of 30 days' credit has increased the equivalent merchandise investment by 28.5 dollar-years.

The merchandise investment turnover in this case, if no profit is made, is

$$\text{M.I.T.}=\frac{342}{199.5}=1.71$$ as compared with 2 on the cash basis.

If 60 days' credit is extended, the merchandise investment on January 1, is $\$342+\left(\frac{342}{12}\times 2\right)$ or \$399.

At the end of the year there are still two months sales or \$57 to be collected; therefore, \$57 is the merchandise investment on December 31.

The equivalent merchandise investment represented by the area under the long dash and dot curve is 2736 dollar-months or 228 dollar-years. Consequently, the extension of 60 days' credit has increased the equivalent merchandise investment by 57 dollar-years over the cash basis and by 28.5 dollar-years over the 30-day credit basis.

The merchandise investment turnover in the 60-day credit case, if no profit is made, is $\text{M.I.T.}=\frac{342}{228}=1.5.$

If the investment conditions are as shown in Figure 9, the investment in merchandise for a 30-day credit business on January 1, is $\frac{\$342}{2}+\frac{\$342}{12}$ $=\$199.50$ and on December 31, is $\frac{342}{12}=\$28.50.$

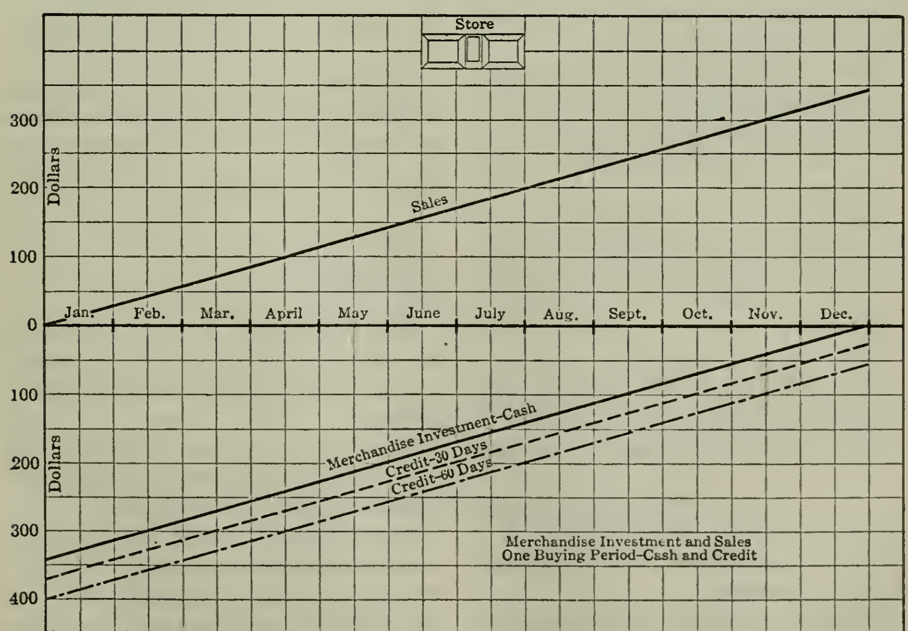

Figure 15. Chart of Investment and Sales where Credit is Given

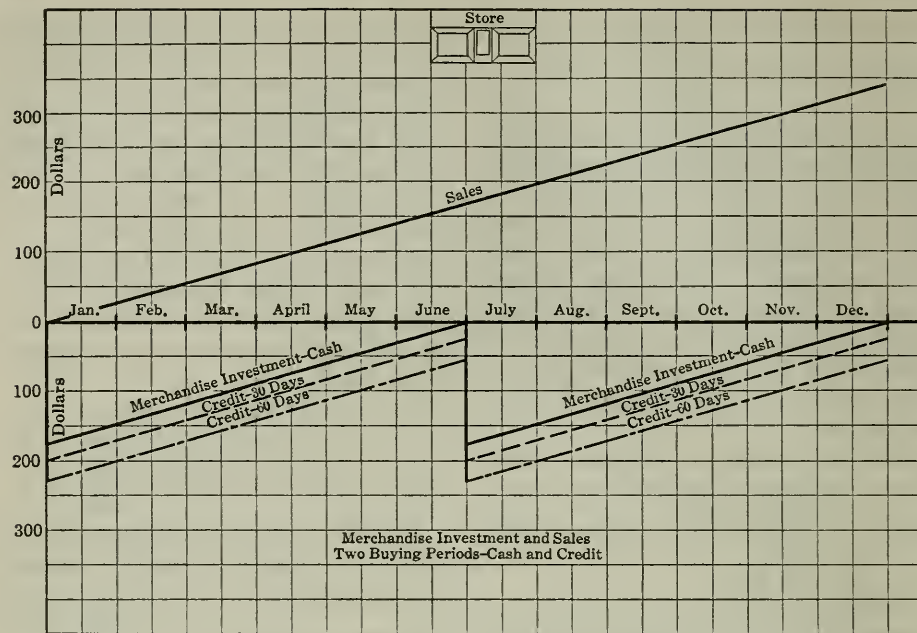

FIGURE 16. CHART FOR CASH AND CREDIT

The investment on June 30, is also \$28.50 and on July 1, is \$199.50.

The investment conditions for cash, 30-day credit, and 60-day credit business are shown in Figure 16.

For a 30-day credit business the equivalent merchandise investment represented by the area under the dotted curve is 1368 dollar-months or 114 dollar-years.

This gives a merchandise investment turnover of $\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{114} = 3.$

For a 60-day credit business the merchandise investment on January 1, is $\frac{\$342}{2} = \left(\frac{\$342}{12} \times 2\right) = \$228$, and on December 31, is $\frac{342}{12} \times 2 = \$57$. The investment on June 30, is also \$57 and on July 1, is \$228.

The equivalent merchandise investment represented by the area under the long dash and dot curve is 1710 dollar-months or 142.5 dollar-years. The merchandise investment turnover is then $\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E. M. I.}} = \frac{342}{142.5} = 2.4.$

With four buying periods per year as shown in Figure 10, the investment in merchandise for a 30-day credit business on January 1, is $\frac{\$342}{4} + \frac{\$342}{12} = \$114$ and on December 31, is $\frac{\$342}{12} = \$28.50$.

The investment on March 31, June 30, and September 30, is also \$28.50 and on April 1, July 1, and October 1, is \$114.

The investment conditions for cash, 30-day credit, and 60-day credit business are shown in Figure 17.

For a 30-day credit business, the equivalent merchandise investment represented by the area under the dotted curve is 855 dollar-months or 71.25 dollar-years.

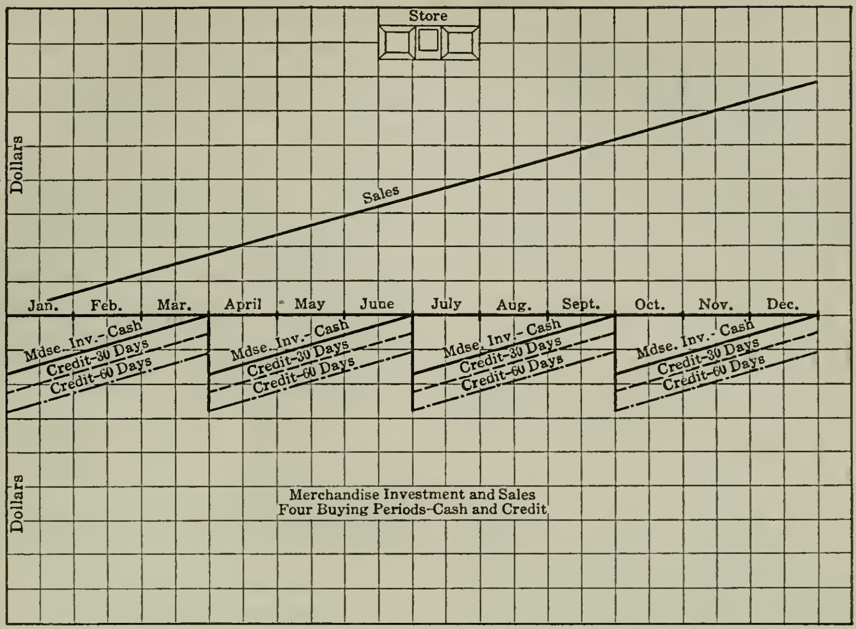

FIGURE 17. CHART OF CASH AND CREDIT FOR SEVERAL PERIODS

This gives a merchandise investment turnover of $\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{71.25} = 4.8.$

For a 60-day credit business, the merchandise investment on January 1, is $\frac{342}{4} + \left(\frac{342}{12} \times 2\right) = \$142.50$ and on December 31, is $\frac{342}{12} \times 2 = \$57.$

The investment on March 31, June 30, and September 30, is also \$57 and on April 1, July 1, and October 1, is \$142.50.

The equivalent merchandise investment represented by the area under the long dash and dot curve is 1194 dollar-months or 99.5 dollar-years.

The merchandise investment turnover then is $\text{M.I.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.}} = \frac{342}{99.5} = 3.44.$

In the same way the merchandise investment turnover can be figured for various buying periods. In Figure 18, the solid curves show the effect of credit extension on the merchandise investment turnover where the yearly sales remained the same and where the sales were made at the same rate but where the equivalent merchandise investment varied on account of different buying periods and consequently different initial investments.

Where the yearly sales were constant but the equivalent merchandise investment varied on account of different selling rates, the same curves were found to hold true.

Figure 19 shows the sales and investment for the dealer's fan business, the stock conditions of which were illustrated in Figure 7. In this case, both the sales and stock varied in a very haphazard way.

If the fans were bought and sold for \$10 each, the yearly sales would be \$120. The equivalent merchandise investment on the cash basis represented by the area under the solid line is ap-

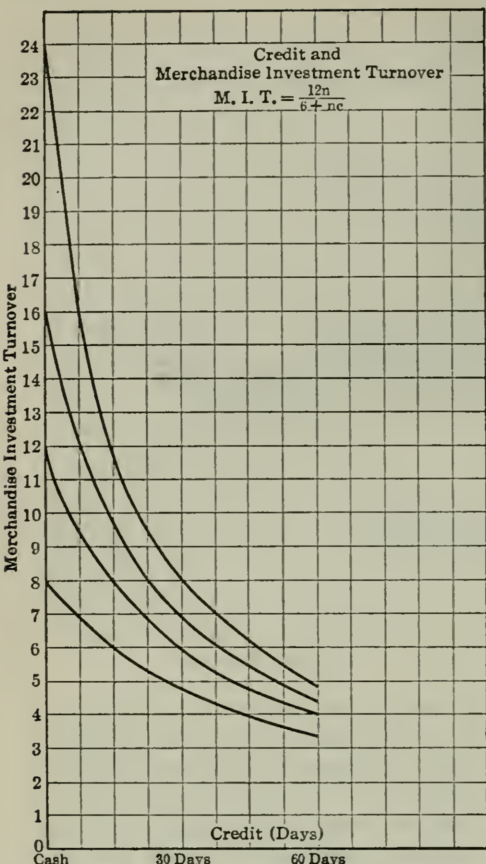

FIGURE 18. CURVES OF INVESTMENT TURNOVER

proximately 40 dollar-years. On the 30-day credit basis, it is represented by the area under the dotted curve and is 50 dollar-years. On the 60-day credit basis, it is represented by the area under the long dash and dot curve and is 60 dollar-years. The merchandise investment turnovers for the three cases are:

$$\text{Cash M.I.T.} = \frac{120}{40} = 3.$$

$$\text{30-Day Credit M.I.T.} = \frac{120}{50} = 2.4.$$

$$\text{60-Day Credit M.I.T.} = \frac{120}{60} = 2.$$

The dotted curve in Figure 18 which was plotted from these figures shows that the extension of credit affects the merchandise investment turnover according to the same law irrespective of how the sales and merchandise investment vary.

The actual figures from which the curves in Figure 18 were plotted are given at the top of the next page.

The equation of the credit turnover curves is very simple and, similarly to the per cent profit turnover equation, applies to any business irrespective of the shape of the sales and merchandise investment curves.

The credit turnover equation is $\text{M.I.T.} = \frac{12n}{6+nc}$. In this equation "$n$" represents the number of buying periods and "c" is the credit period.

30 days = 1 credit period
60 days = 2 credit periods
etc.

The equivalent number of buying periods per year can easily be found for any shape sales and investment curves by taking "n" as ½ the stock turnover or as ½ the merchandise investment turnover at zero profit.

The extension of credit increases the amount of money invested in merchandise, and to the extent that it does this, it decreases the turnover of that money if the yearly sales remain the same.

Consequently its effect is greater on those lines, having a high rate of turnover on the cash basis as in these lines the investment is a minimum for the amount of yearly sales as compared with lines of a lower turnover.

Quantity Buying Price. There is one other element that affects the merchandise investment turnover, namely, quantity buying price, or from the retailer's standpoint, the cost of his merchandise. The unit cost usually varies according to the quantity purchased.

B.P.	1		1.5		2		4		6		8		12	
	M.I.T.	E.M.I.	M.I.T.	E.M.I.	M.I.T.	E.M.I.	M.I.T.	E.M.I.	M.I.T.	E.M.I.	M.I.T.	E.M.I.	M.I.T.	E.M.I.
Cash...	2	171	3	40	4	85.5	8	42.75	12		16		24	
30 d....	1.71	199.5	2.4	50	3	114	4.8	71.25	6		6.85		8	
60 d....	1.5	228	2	60	2.4	142.5	3.43	99.5	4		4.37		4.8	

It is quite evident that if a year's supply of goods is purchased at the beginning of the year, the merchandise investment will be larger and consequently the merchandise investment turnover smaller than would be the case if, for instance, only a three month's stock is purchased.

The M.I.T. in the second case, however, would not be four times as large as in the first case on account of the lower unit price on the large quantity.

On account of the number of dependent variables that have to be considered in discussing the effect of buying price on the merchandise investment turnover and also on account of their irregular variation, it is impracticable to show this effect by curves.

Any particular case can, however, be solved by substituting in the following equation:

$$\text{M.I.T.} = \frac{2n \text{ Yr. Sales}}{a}.$$

where a = total yearly amount paid for the merchandise.

This equation may be written:

$$\text{M.I.T.} = \frac{2n \text{ Yr. Sales}}{cd}.$$

Where c = total number of units purchased yearly, d = unit cost.

The application of this formula can be seen in the case of the dealer who uses 1200 sockets a year at a uniform rate. If he buys in lots of 600, the unit price is 28½ cents and the number of buying periods is 2. If he buys in

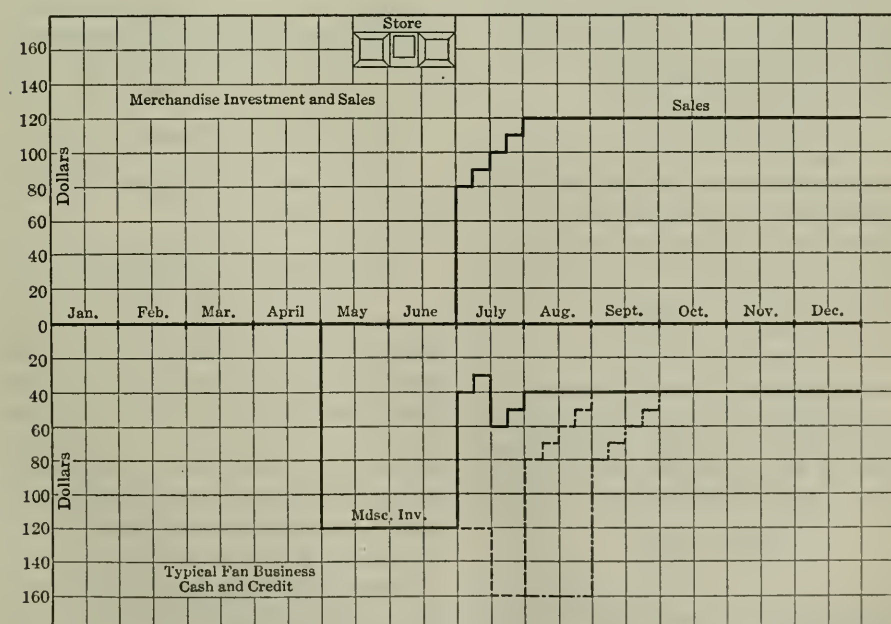

Figure 19. Chart of Typical Fan Business Cash and Credit

lots of 100, the unit price is 37 cents and the number of buying periods is 12.

Assuming the yearly sales to be \$624 and substituting these values in the equation for M.I.T., we find in the first case that $\text{M.I.T.} = \dfrac{2 \times 2 \times \$624}{.285 \times 1200} = 7.3.$

In the second case we find that

$$\text{M.I.T.} = \frac{2 \times 12 \times \$624}{.37 \times 1200} = 33.7.$$

Recapitulation of Laws of Merchandise Investment Turnover

1. When the total yearly (net) sales remain constant, the merchandise investment turnover varies inversely as the equivalent merchandise investment.

$$\text{M.I.T.} \propto \frac{1}{\text{E.M.I.}}.$$

2. When the equivalent merchandise investment remains constant, the merchandise investment turnover varies directly as the yearly sales.

$$\text{M.I.T} \propto \text{Yr. Sales.}$$

3. When the total yearly (net) sales remain constant, the merchandise investment turnover varies directly as the equivalent number of buying periods.

$$\text{M.I.T.} \propto \text{E.N.B.P.}$$

4. When the total yearly cost of goods sold remains constant, the merchandise investment turnover varies with the equivalent number of buying periods and the percentage of profit according to the following equation.

$$\text{M.I.T.} = \frac{200n}{100-p}.$$

5. When the total yearly (net) sales remain constant, the merchandise investment turnover varies with the equivalent number of buying periods and the credit period according to the following equation.

$$\text{M.I.T.} = \frac{12n}{6 \times nc}.$$

6. When the total yearly (net) sales remain constant, the merchandise investment turnover varies with the total yearly amount paid for the merchandise according to the following equation.

$$\text{M.I.T.} = \frac{2n \text{ Yr. Sales}}{cd}.$$

The capital invested in the business is found in the merchandise, in the equipment, and in the cash.

The merchandise investment includes, in addition to the money invested in the goods in the store, the investment in the goods sold but not paid for, in other words, the accounts receivable.

The equipment includes all equipment necessary to carry on the business such as store property, store equipment, office equipment, delivery equipment, etc.

The cash includes the cash on hand and in the bank.

The equation that expresses the invested capital turnover is:

$$\text{I.C.T.} = \frac{\text{Yr. Sales}}{\text{E.I.C.}}.$$

The equivalent invested capital may be expressed as the sum of the equivalent merchandise investment, the equipment investment, and the cash.

$$\text{E.I.C.} = \text{E.M.I.} + \text{Equip. I.} + \text{Cash.}$$

The invested capital turnover may then be expressed as

$$\text{I.C.T.} = \frac{\text{Yr. Sales}}{\text{E.M.I.} + \text{Equip. I.} + \text{Cash.}}.$$

The equivalent merchandise investment is the live, working part of the invested capital and consequently the things that affect it affect the invested capital in the same way and in degree depending upon the relative magnitude of the equivalent merchandise investment as compared with the equipment investment plus the cash.

Each of the three types of turnover has its special significance in the planning and conduct of a business. One

merchant may decide that he is interested only in the turnover of stock while another merchant may feel that the turnover of the merchandise investment is of particular import to him or that he needs to know the turnover of the invested capital as well.

The stock turnover by lines enables the merchant to segregate the fast moving lines from those that move slowly. It indicates the commodities for which there is a ready demand and those for which a demand must be created. This shows the merchant where to concentrate his advertising and sales effort. It enables him to apply different sales methods particularly adapted to the conditions. He can perhaps increase the mark-up on the slow-moving lines to compensate for the slowness of movement or possibly by decreasing the mark-up the movement can be speeded up. The buying can be scheduled so that the equivalent stock can be reduced to a minimum.

The stock turnover can be increased by increasing the proportion between the yearly sales and the equivalent stock. This can be done:

1. By increasing the sales while the equivalent stock remains the same, decreases, or increases at a slower rate than the sales.

2. By decreasing the equivalent stock while the yearly sales remain the same, increase, or decrease at a slower rate.

The sales may be increased in proportion to the stock by better merchandising methods or by reducing the price.

The first method is absolutely safe and is almost universally applicable as there are few places of business where improvement in merchandising methods cannot be made after a careful study of the possibilities. Illustrations are common of businesses that have prospered by improvements in sales methods.

The method of price-cutting in skilful hands may produce the desired result. This method, however, must be used with a great deal of care as it is liable to produce more harm than good.

By reducing the price more people are included in the group of purchasers as, of course, there are a larger number of people that can buy an article for one dollar than for two dollars. But it does not necessarily follow that the sales will be increased to any extent.

This is particularly true where staples are concerned. People buy sugar, flour, shoes, etc., even though the price is high and as their urgent needs are satisfied, a reduction in price will not increase their buying to any extent. In the case of luxuries and conveniences, however, the people do not buy so readily when prices are high and a price reduction will more greatly stimulate the movement of this class of goods.

The demand for staples has been termed inelastic and for luxuries, it is said to be elastic. The more elastic the demand, the more the sales can be increased by price-cutting. Even where the demand is inelastic, price-cutting may increase the stock turnover of an individual merchant at the expense of his competitors.

It is a question as to whether it is desirable to increase stock turnover by this method, however, as the unit profit is reduced when the price is cut.

Then too, if one dealer cuts the price and all of his competitors do likewise, it is quite probable that all will suffer from reduced annual profits even though the stock turnover is increased.

A merchant pays a certain amount for the goods he sells and he sells them for a certain other amount usually greater than the first. It is the differ-

ence between these that determines the success or failure of a business. The goods are only the means to an end.

For certain reasons, a merchant may wish to invest as little money in merchandise as possible. The turnover then of this investment becomes of great importance for he must get his original investment back through sales before he can invest it again. This turnover is dependent to a large extent upon the movement of the goods but the unit profit and the extension of credit also play an important part. An analysis of the merchandise investment turnover will largely determine the advisability of extending more or less credit and the amount of unit profit necessary with the given investment and the probable sales.

The turnover of the total invested capital together with sales and net profits is after all the final measure of business success. For no matter how fast the goods moved or how rapidly the investment in goods was replaced, if an unduly elaborate and expensive setting was required in order to produce the rapid stock or merchandise investment turnover, the turnover of the capital necessary to carry on the business would be slow and the business might be a failure from the standpoint of annual net profits.

Consequently the invested capital turnover should be made to approach as closely as possible to the merchandise investment turnover. The extent to which this can be done will be determined by the amount of equipment and cash necessary to carry on the business.

The invested capital turnover is particularly valuable for comparing the business of the various stores in a chain.

In the final analysis, it must be remembered that turnover is not an end in itself but merely a means to an end, namely, yearly net profits. Its effect on profit has not been brought in as that is logically the subject for discussion which, if added, would make this article too long.

THE FOREMAN OF THE FUTURE

BY DUDLEY R. KENNEDY*

I REMEMBER distinctly how I was made a foreman. I was made a foreman just as all foremen were made —by a tap on the shoulder and the words: "You're a foreman; there's your desk, get busy."

Those were my instructions, and that was my training. It was assumed that I had absorbed, as a sponge absorbs water, the mechanics and technique of the particular job upon which I had been working. As a matter of fact I knew very little. For one thing, I knew nothing about the necessary reports or accounting forms, except those few that had passed through my hands in the course of the day's work. In my new job I had to know many more, and I was supposed to pick up this and much additional knowledge by asking questions of the assistant superintendent or the superintendent until I learned the job.

The above incident may seem a little forced but it is true. It is no exaggeration to say that nine out of ten foremen, at the present time as well as in the past, have been made foremen in just about the same fashion—much as the knights of old were created, by a gentle tap of the sword. In the past the foreman has done the very best he could, but he has been the scapegoat of a bad system; and although in the last ten, fifteen, twenty years industry has grown and changed tremendously the foreman has been left to shift pretty much for himself and has been expected to get his ability, his training, and his inspiration from heaven knows where.

The trouble is that people nowadays take too much for granted, going along day after day, and week after week, and giving little thought to what is taking place around them. You can't surprise anyone any more, and this blasé attitude seems to have become part of our national philosophy and part of our daily life. If you tell something really startling, if you describe some new mechanical or electrical wonder, you may be greeted with a raised eyebrow and the words, "That so?" but that's about all. And it is this very taking of things for granted that has blinded us to the fact that so far as training goes, we have given our foremen absolutely none, and this in spite of the increased duties that we have been more or less automatically unloading on them for many years.

Every now and then along comes some new wrinkle in management, efficiency, personnel, or some other industrial problem, and always it affects the foreman. One day he finds that some of his duties and prerogatives have been taken away without a word of explanation and handed to somebody else; and the next day some new duties are saddled on him of which he never heard. The truth is that industry has been utterly indifferent as to the means of training foremen, of preparing men to be foremen, and of keeping them abreast of developments, after they have come to be foremen.

The war brought home to many people the real situation. All those who were engaged in work that bore directly on munitions or ships, or anything intended by the government for

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war purposes, when it came to getting out production on the scale and with the speed necessary, discovered for the first time what the neck of the bottle really was. It was the foreman. And he, of all men, was the one who was found wanting. Least of anyone in the organization could he rise quickly to the emergency confronting him. It was not that he did not desire to do so: he was just as sincere and just as eager as anyone else; but he had not been properly trained, he had no reserve to fall back on, he possessed no concealed fund of information. He did the best he could, but very often his best consisted simply in running around in circles, fast indeed but almost aimlessly.

But lest it be thought that my criticism is too harsh, let me hasten to make an acknowledgment. The truth is, after all is said and done, that the foreman is the man who has largely brought about the results we have obtained in industry. And it must never be forgotten that to the workmen in the big plant it is he who represents the company.

This was true even twenty years ago, in those concerns so large that the workmen seldom saw the "big boss." As I remember it, in the first place I worked I think I saw the "big boss" only three times. In a hazy sort of way I knew who the general superintendent was because we saw him occasionally around the shop. But to me as to the rest of the men the real seat of authority was the foreman. To us he was the company and rightly or wrongly we assumed that he held within himself and handed out to us the policy of the company. When he said anything we believed that he spoke with authority for the man in the front office. And the point I wish to make here is, that the lower down in the scale of intelligence you go among the workers, the more absolutely is such a belief held and the more surely does the foreman stand in their eyes as *the* boss. He is the man who controls their job and their pay envelope, and he is the man they wish to please and to curry favor with.

Throughout the war and since, there has been a great deal of talk in this country about radicalism, and no executive who honestly faces facts as they are will deny that sinister influences are at work. And yet how many of their foremen are equipped to combat intelligently radical propaganda among their workers? How many are equipped with knowledge imparted to them by the executives to refute the absurd statements and arguments they hear or read? In short, how many foremen are in a position to tell the workers the truth—the plain, unvarnished truth?

The actual state of affairs is this, and it is something we should never lose sight of, that the greatest part of so-called radicalism consists of an honest misapprehension of facts, or believed facts. And those foremen who possess some degree of education and are in daily contact with the workers owe it to themselves, their employers and their country to preach constantly the gospel of truth—simply that. For after all business in general is honest; it has nothing to conceal, nothing to apologize for, and nothing to be ashamed of.

It would certainly be a wonderful benefit and advantage to American foremen if they could only be grounded in certain fundamental economic facts, facts, for instance, such as those pointed out by Mr. George E. Roberts, Vice-President of the National City Bank of New York, in various articles in *Administration*[1] and elsewhere.

[1] See *Administration* for January, 1921, p. 1, and for June, 1921, p. 721.

Such articles as these constitute a fine piece of constructive work, and the information they contain should be available to all executives, in terms of their own industry, so that they might in turn pass it down to all those who misunderstand and misinterpret what they read in the radical press and hear from the soap-box orator haranguing the crowd on the street corner.

When a workman comes to his foreman and in all honesty asks if a certain report or statement about the business is true, how much better it would be to have the foreman so well informed that he could set the inquirer right, rather than that he should be obliged to shrug his shoulders and turn away because of his lack of information. How many workers—in fact, how many people in general—know that more than ninety per cent of all the businesses in this country have a hard struggle to make a net six per cent profit on invested capital? How many people know that the average life of a business is less than thirty years?

In the light of these facts what is the foreman of the future going to be? More and more he is going to be the "alter ego," the "other self," of the chief executive of the business. That, I realize, is rather a large order, but that is the task to which we must set ourselves. We must make of our subordinates the kind of men we should be proud to have step in and take our place, if necessary. It may be necessary for them to step in at any time and they should be ready. When that time comes they should not be obliged to pick up their job blindly and a little at a time, as most foremen in the past have been obliged to do. On the contrary, they should be not only equipped with the mechanics and technique of the business, but they should know something also about the financial end of the business, the sales end, the market end, the raw material side, the purchasing side—in fact, about every feature of the business. They should be made to realize that there are many problems in business besides the little particular problems that foremen are paid to take care of. The foreman in big business does not appreciate the troubles that perplex the man in the front office and it is all because such troubles have been deliberately kept from him in the past.

I have repeatedly made a statement, which some people think is too broad, that where the foreman cannot be told all of the facts about the business one of two conditions exists—either a poor set of foremen or a poor business. There is something wrong about the business if you cannot tell them the facts, or else you don't consider them intelligent enough to understand, if they were told. Isn't that about the plain fact of the case, without mincing matters at all?

I had a consulting business of my own for some time prior to my present work. In that business I went about the country from Boston to Chicago. I was on the road most of the time, in all kinds of plants, talking to all kinds of people. I had one job with a man who was typical of the old school. I think he kept his private ledger himself, rich as he was, and as big as his business was. He was extremely afraid somebody would find out something. He had the worst morale in his plant I ever saw; of esprit de corps, there was absolutely none. His attitude of "Sh, sh! Keep it dark!" was all around the place.

While talking to him one day I said, "Mr.— I think it would be a pretty good move for you to start to open up a little bit and talk to some of your people. They have some very exaggerated ideas about many things pertaining to your business. They do not

understand your problems at all, and it is your own fault, because you not only don't seem to want them to understand, but you deliberately try to make them misunderstand. Now, I believe you could well afford to tell your people, your foremen especially, your real situation."

"Why," he replied, "I wouldn't dare. I wouldn't dare to tell those people how much I made last year."

"Why, was it so much that you are ashamed of it?" I asked.

"No," he said, "it wasn't."

He told me how much it was.

"That is nothing to be ashamed of," I replied. "The fact is, that your employees think you made ten times that much last year."

He was worried for fear they would think he was making too much money, or profiteering, or taking something that belonged to them. As a matter of fact they honestly believed he made many times as much as he did. Would he not have been better off to have told them the truth rather than go on fooling himself that he was putting something over?

The pitiful ignorance of some of our newly arrived working people in this country is so vast that we simply cannot comprehend it. We do not stop to analyze that such ignorance is perfectly natural and that we must treat some of these people as children. Very often an immigrant who gets on a steamer and comes over here, has never been out of his little village back in the Balkan States or some place in Central Europe. He has never seen machinery of any kind; he has never seen an automobile truck; he has never seen the things that you and I take as commonplace and everyday sights; perhaps it is the first time in his life that he has ever seen a railroad train.

We take this ignorant and confused individual and throw him into the hopper, merely tell him to "get busy." He knows nothing about electricity, nothing about machinery, and nothing about the hurly-burly life of our factories of today. Is it surprising that he gets hurt and sometimes killed? Is it any wonder that we often go around in our own shops complaining because we cannot get out production?

The day of driving production out of working people has gone by, notwithstanding the economic change through which we are going. It is leadership that we want in industry today and in the future; it is leadership that is demanded from the right type of executive, a leadership freely and willingly and gladly acknowledged by those who work for the man that exercises it. You know what such leadership is. You know the sort of man that you respect, that you would work all night for. It matters not how prominent a man you may be or may become there is in your life today some man whom you look up to as a leader, who has something about him called "personality" that grips you—that something which would make you do anything within reason he would ask of you, because it is leadership, it is pull, it isn't drive. If he drove you, you would rebel and hate him, and in this respect you are no different from the man with the blue shirt on.

It would be well if men in authority would only remember that within, we all think and feel pretty much alike—perhaps in different phrases and by different methods of analysis and thought but essentially in the same way; for, after all, we are all built just about the same and our organs are constituted exactly alike. With this in mind it is simply common sense to say that the best way to produce results is to do as you would be done by. I think that if that plain recommendation were practiced day in and

day out in factory life, we would have no labor trouble whatever, no industrial unrest.

A danger about the present economic situation is that there is a tendency in some places now to get even—to get even with labor because it has had the best of it;—the idea being, "Now we have these boys, let us put the screws down." A more fallacious notion was never born.

Personally, I believe in the open shop I always have, and always will believe in it as a principle, but I am not going to discuss that question here beyond saying that I believe that "open" should be spelled "o-p-e-n" and not closed by either side. Moreover, this is not the time to take advantage. Simply because labor took advantage of the situation when it had the opportunity does not make it right that industry and capital and management should do so now that they have the chance.

We are not suffering from overproduction today; we are suffering from underconsumption. We are just as short of production, fundamentally, as we were a few months ago when we were yelling our heads off for it. When consumption comes back it is my humble prophecy that we are going to be as badly off as we were a year ago and we will be clamoring just as hard for the worker to speed up.

We are intrinsically seven or eight million men short because of the six years' stoppage of immigration. We are expanding and growing all the time, but by reason of the stoppage of immigration we have lost potentially seven or eight million men who otherwise would come into the country.

It seems very plain to me that now is the time to train and study and work towards leadership. The point has been reached where big, drastic, fundamental changes in machinery and efficiency are rare. We have crowded our machines and we have speeded them up close to the limit. We will continue to progress, of course, but not nearly so rapidly as in the past. Our biggest leakage in industry, however, for many, many years past has been lack, not in mechanical equipment but in leadership; lack of the ability to get the maximum out of the machines through the men who worked on them. The best proof of this is, that every foreman is getting out more production per capita today than he has at any time in the last four years. And the reason is simply the economic idea in the mind of the man that his job means something to him now. Jobs aren't so plentiful nowadays, and every worker wants to hold his, and involuntarily, almost subconsciously, he gives more of that for which he has been paid. He is interested in holding his job, and he gives production.

Whether the worker will continue to give production in the future depends upon many things, and the most important of these is the foreman. And the foreman of the future is going to be, as I have said, the "other self" of the "big boss."

THE PREVENTION OF LABOR TURNOVER

BY H. G. KENAGY*

THE conventional magazine discussions of labor turnover view the problem from the three angles of personal, industrial, and social causes, all of which are so interrelated and intertwined that no single comprehensive plan for attacking the problem can be developed. Deficiencies in industrial administration, in the usual classification, appear as one of two or three subheadings under "industrial causes." Personal and social causes of turnover are recognized, seemingly, as factors outside the limits of administrative control, for few writers attempt to describe any plan by which these elements can be controlled.

A much more useful classification can be made by viewing the whole matter as a problem in personnel administration, eliminating all elements which are not amenable to administrative control. This point of view simplifies and unifies the general problem in such a way that a plan for solving it can be worked out with the definite assurance that, within predictable limits, the expected results will be achieved.

From the administrative viewpoint, all turnover is the result of (1) poor selection of employees (2) poor training and supervision (industrial administration) and (3) poor community relations. The last of these recognizes as an administrative function the initiation and development of activities calculated to secure the good-will of the immediate community. It includes, also, intelligent activity, through employee organizations perhaps, in connection with proper housing facilities, Americanization, and related problems. Because of the relation between living conditions and labor turnover, management cannot afford to be sparing in its efforts to make the community a good place in which to live.

"Deficiencies in industrial administration" and "undesirable labor standards," are phrases usually employed to express the causes of turnover arising from the direct contact of the management with the worker. With some few exceptions all of these factors arise in connection with the training and supervision of the workers. Those which do not arise here, such as unstabilized employment, inadequate wages, and undesirable conditions of work, can be largely eliminated by giving applicants full information about the jobs for which they are applying. After a man is on the job, his development into a skilful and satisfactory employee becomes wholly a problem in personnel administration. The rate of turnover from preventable causes is a direct measure of the effectiveness of the training and supervision.

Such a statement can only be true, of course, when the selection of employees by the employment department is practically perfect. That condition is rarely found. Because this is true, and because it is now possible for most companies to give the problem of selection more careful study, it seems distinctly worth while to point out the extremely important relation between selection and turnover, and indicate a method which can be used to remedy the situation. It is not intended here to revive, in its ancient setting, the

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time-worn "square peg and round hole" idea. But it needs to be pointed out that some definitely measurable qualities of individuals, when discovered and measured, may be used with scientific accuracy in predicting the future value of applicants as employees of a company, thereby making it possible to reduce labor turnover to a healthy minimum.

It goes without saying that the personnel department which can select employees with qualities and abilities similar to those possessed by the successful and long-service individuals now employed by the company, has eliminated the first great cause of turnover. Such a program, however, requires long and careful research by a staff which possesses a thorough knowledge of scientific methods and technique.

It will not be possible to discuss at length all of the various measuring sticks which have been developed as means to scientific selection. The method can be illustrated by brief references to results which have been obtained by the use of some of them.

Each job in any given company requires for its successful performance a certain amount and kind of intelligence. The more complex and varied the duties, the greater the intelligence required to perform them. In order to select employees who can satisfactorily fill the various positions and who will remain with the company, the employment department must be able to choose those applicants who have the necessary intellectual equipment. The preliminary step, of course, is to discover how much intelligence is needed for each job. The usual method of setting an educational standard for a job is obviously inadequate. An office boy with only a common school education is often found to possess as much native intelligence as the department heads or other executives with college degrees. By giving an intelligence test to all persons now holding a particular job and comparing the scores to the records of the individuals, it is easy to set up a standard or norm which will represent the amount of intelligence required to fill that position satisfactorily. Once such a standard has been determined, it becomes a measuring stick which can be applied to all applicants for that job. The effect of the use of this method is obviously to keep out of the company all persons not intelligent enough to do the work for which they apply. The turnover due to inefficiency is thereby lowered.

Figure 1 illustrates this method of using an intelligence test in selection, though in this case only the "upper critical score" was set, with no range of intelligence specified. The analysis of the test scores of the 55 persons holding like positions in one company disclosed the fact that the successful long-service employees were men of average intelligence or below, as measured by the test. Only six persons scoring over 100 in the test were with the company more than 15 months. The average length of service for persons scoring over 100 is less than 15 months, while the average for persons scoring less than 100 is almost 5 years. That meant that the company's high turnover had been caused by hiring men whose intelligence was superior to that required for the job. In this case, in order to eliminate the turnover, an upper limit score (the horizontal block line on the chart set at 100) was determined upon and instructions given not to hire any applicant who made a grade above this limit. The justification for this is evident from the chart.

For many kinds of work there is a lower as well as an upper limit to the intelligence which an employee should have in order to fill the job satisfac-

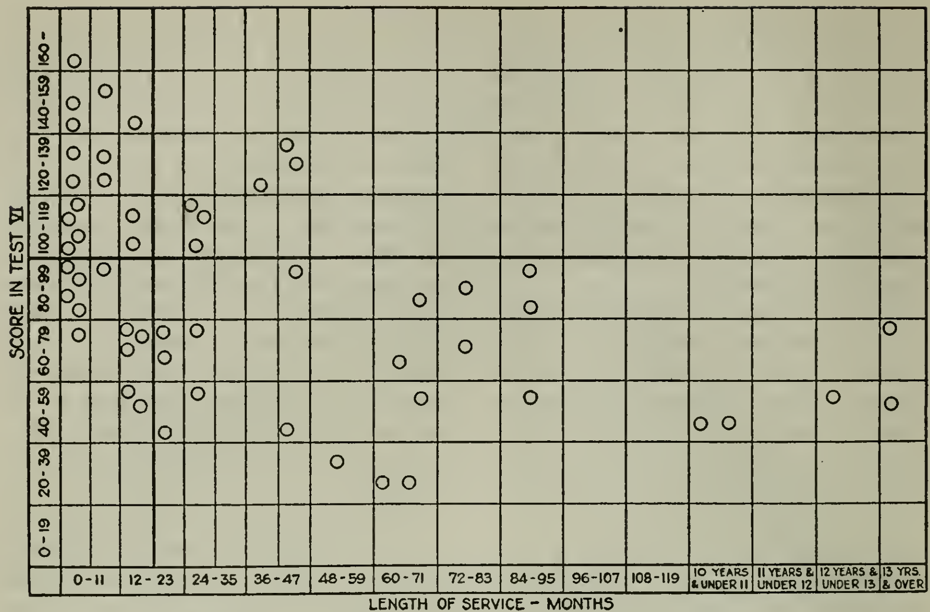

Figure 1. Intelligence Predicts Length of Service

torily. Figure 2 illustrates this fact. The turnover in the department pictured is seen to be at the extremes of the scale. The cases at the left are individuals who were too dull and slow to learn. They could not make good on the job, so were dismissed or left of their own accord. No one who had made a score of less than 68 remained 18 months and only two remained who received a score of less than 78. At the opposite end of the scale we find other persons who have left. They were too bright for the type of work. They

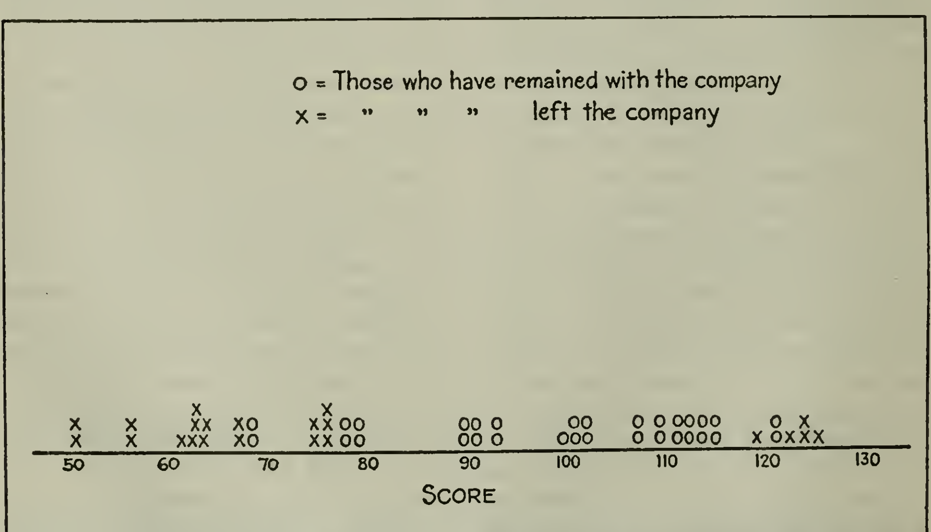

Figure 2. Results of Intelligence Test

learned rapidly, soon became efficient, and reached the limits of the job, then got dissatisfied and quit. In between these two groups are the persons whose intellectual equipment fits them for the kind and amount of work required. They are efficient workers and are satisfied with their jobs. They are the employees who give stability to the organization.

An intelligence test is, of course, only one of the measuring sticks which should be used in developing proper selection standards. For some jobs, indeed, intelligence is a very minor consideration. An employee may well come within the proper intelligence range for a position, but lack other essential qualifications. Of these qualifications, certain will-traits or temperamental factors are likely to be found of importance. Such characteristics are usually judged from the attitude and behavior of the applicant during the interview, and the faulty estimates made by interviewers have been responsible for high turnover figures. It is now possible to measure accurately, by scientific tests, a number of these will-traits, such as: speed of movement, speed of decision, freedom from inertia, impetuosity or energy of action, flexibility, freedom from self-consciousness, motor inhibition and care for detail. One or more of these traits will be found important in nearly every job.

In a recent study of employees of a large manufacturing company, where young employees went to the company night school to fit themselves for better positions, it was found that a test of perseverance, combined with an intelligence test, would enable the department head to eliminate from study classes 86 per cent of those who *could not* succeed as comptometer operators. Other tests were equally successful in picking persons as stenographers.

To the intelligence test and the will-traits tests can be added such trade tests of proved value as are available. It is important, also, to add an interest analysis, which can be easily scored, in order to see if the applicant's interests correspond closely enough to the interests of those now successfully holding the same position. Finally, it is possible to develop a method of grading an applicant's personal history record, previous to employment, which will eliminate the guesswork and hunches hitherto attached to it. It can be given an objective score based on its degree of similarity on significant items to the personal history facts of successful persons now employed.

A scientific program for reducing labor turnover by improved selection involves, then, three steps:

1. The determination, by tests and other means of analysis, of the essential characteristics and abilities possessed by persons now holding the various positions in the company.

2. The development of standards or norms, based on the records obtained.

3. The use of these standards or norms in determining the fitness of applicants for positions. Applicants who average either below or above the limits for the positions they seek, could be rejected as unsuitable material.

It is not advocated, of course, that applicants for every position must be subjected to a series of tests requiring hours of time, thus burdening the employment department and perhaps frightening away desirable applicants. But, after some experimentation and research, there can be evolved for each job one or two short tests which have real discriminatory value. Naturally the severity of the tests should increase with the importance of the position. Applicants for responsible positions may well be required to submit to a thorough testing program. Under the

conditions of employment now obtaining and likely to remain for some time, very few desirable applicants will refuse to take the tests. The idea can be sold to most applicants so readily that they will be completely at ease.

To illustrate what will happen to the turnover rate when serious attention is given to scientific methods of selection, Figure 3 is included. This chart tells the story of what happened in one large company where heavy turnover had been causing real concern for the future well-being of the company. Of men hired in 1914, only 40 per cent remained at the end of the first year, 18 per cent at the end of the second, and 10 per cent at the end of the third year. The broken lines represent percentages of men remaining after equal lengths of service. In 1916 the company began to introduce a program of selection similar to the one suggested in this discussion. Reference to the chart will show that the curve of stability began to rise from that time and shows improvement each successive year. Turnover due to poor selection of workers employed is being very largely eliminated and the savings to the company more than pay for the cost of the research and analysis from which the new system was developed.

Figure 3. Reducing Turnover By Better Selection

WARRANTIES COVERING GOODS

BY WILFRED G. ASTLE*

THE definition of warranty as stated in the Uniform Sales Law represents the attitude of most American courts as to what statements shall be treated as warranties.

This definition, which should be clearly understood by every executive, is:

> Any affirmation of fact or any promise by the seller relating to the goods is an express warranty if the natural tendency of such affirmation or promise is to induce the buyer to purchase the goods, and if the buyer purchases the goods, relying thereon. No affirmation of the value of the goods, nor any statements purporting to be a statement of the seller's opinion only shall be construed as a warranty.

Any kind of warranty may be made about goods. For instance, it might relate either to the character, the quality, or the title of the thing sold, and form a part of the contract of sale, though collateral to its express object, by which the seller insures the buyer against loss or against failure of one or more of its terms. Warranties may be either express or implied. It should be noticed in this connection that if the contract is in writing, the warranty will also have to be in writing.

The idea that the seller, who has the actual possession of goods and offers to sell them, impliedly warrants that he has the right and power to do so and therefore that he has a good title and will pass such title to the purchaser, is now everywhere recognized in our law. Upon principle there is no good reason why a seller should not be held to give an implied warranty of title as much when not in possession as when he actually hands the goods over to the buyer.

The Uniform Sales Law has made no distinction in implied warranty of title dependent upon the seller's possession. It is there provided that:

> In a contract to sell or a sale, unless a contrary intention appears, there is an implied warranty on the part of the seller that in case of a sale he has a right to sell the goods, and that in case of a contract to sell he will have a right to sell the goods at the time when the property is to pass.

If the buyer has knowledge that the seller does not have a good title, he cannot rely upon the seller's conduct or offer to sell as being an implied warranty of title. Some executives may not know that title is not warranted at a sale made under authority of law, as for example where a sheriff sells a debtor's goods to satisfy his creditor's claims. And, of course, where the seller is not sure of his title and purports to sell, not the entire property right in the goods, but only such title as he himself may have, there is no implied warranty of title.

If there is any encumbrance upon the goods, such as a lien or mortgage, this constitutes a breach of the implied warranty of title.

The Uniform Sales Law to which reference has already been made says that there is

> an implied warranty that the goods shall be free at the time of the sale from any charge or encumbrance in favor of any third person, not declared or shown to the buyer before or at the time when the contract or sale is made.

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A seller may also be held liable for his fraud if he sells goods knowing that he does not have title, or that his title is defective.

II

Every business executive has heard the expression *caveat emptor* and doubtless knows its meaning, "let the buyer beware." The legal significance of this phrase is that the seller does not impliedly warrant the quality of his goods. Where the buyer inspects the goods at the time of the sale, or when he is given a suitable opportunity to do so, there is no implied warranty as to quality. Should the buyer, moreover, have such an opportunity to inspect the goods and fail to do so, the seller is under no legal obligation to point out defects in them. In the inspection of the goods, if the buyer should attempt to discover defects in them the seller must not hinder or obstruct him. *Caveat emptor*, as a business principle, has long since been discarded.

This is a day of true service to the customer and sincere interest in him. It is now considered by executives to be not only good business but also good business ethics for the seller to frankly help his prospect in discovering the truth about the goods that are being sold.

If the buyer purchases goods on his own judgment, or if he selects or defines the particular goods or class of goods that he wants, the seller need only furnish merchantable goods of the class indicated, although the latter may know that the buyer wants the goods for some special purpose. If, however, a seller of articles, acting at the request of the buyer, undertakes to furnish goods suited to some particular use, there is an implied warranty by the seller that the goods will be reasonably well adapted to such use. But where the articles are merely sold by description, without any view to the buyer's intended use of them for any particular purpose, the seller is not liable for any failure of the goods to prove suited to the buyer's needs, if they conform to description given.

For example, if a buyer, desiring tubing to be used in a certain oil well, relied upon the judgment of the seller that certain tubing should be used and bought the necessary quantity, any failure of the tubing to prove to be appropriate for the intended use gives the buyer a valid claim against the seller. If the contract called for tubing of certain material and weight, but tubing of lighter and inferior quality was furnished by the seller and innocently used by the buyer, resulting in destruction of the well through breaking of the tubing, the seller is liable for the resulting loss.

The Uniform Sales Law provides:

> Where the buyer, expressly or by implication, makes known to the seller the particular purpose for which the goods are required, and it appears that the buyer relies on the seller's skill or judgment (whether he be the grower or manufacturer or not) there is an implied warranty that the goods shall be reasonably fit for such purpose.

If goods are bought by sample, the buyer has acted upon his own judgment, but he relies on the seller's judgment to supply a bulk of the goods sold which will correspond with the sample. There is, therefore, an implied warranty on the part of the seller that the goods which he will deliver will be of the same quality as the sample, and that they will be merchantable.

III

Remedies of a buyer for breach of warranty differ in the case of express warranties and implied warranties. In some jurisdictions, if title has passed, the sale cannot be rescinded for breach

of an express warranty, the buyer's only remedy being an action for damages.

In those states which have adopted the Uniform Sales Law, such as Massachusetts and New York, the goods may be returned and the price recovered, or instead of rescinding the sale, an action may be brought for breach of warranty. In all jurisdictions, where title has not passed to the buyer, the goods may be rejected upon the discovery of a breach of an express warranty.

For example: A sells to B a certain engine, and warrants that it will develop 200 hp.; the engine is actually delivered to B, and B tries it out and finds that it will only develop 150 hp., and offers to return it upon repayment of the purchase price. A refuses to accept. B then sues A for the purchase money. In some states he would be permitted to recover only the difference in value between the engine as represented and the engine as delivered. However, in those states which have adopted the Uniform Sales Law, he would be permitted to recover the entire purchase price upon returning the engine.

The remedy of rescission for breach of warranty works out justice as between the buyer and the seller, because the buyer may not want the article at any price if it does not come up to the warranties given, and it seems unfair to make him take an article which is inferior or defective even though he may get it for less money.

The Uniform Sales Law provides as follows in such case:

> The buyer may, at his election . . . rescind the contract to sell or the sale and refuse to receive the goods, or if the goods have already been received, return them or offer to return them to the seller and recover the price or any part thereof which has been paid.

The rules given above apply to express warranties only. The following remedies may be used by the buyer when the goods do not conform with the implied or express warranties as to quality, fitness, condition, or otherwise:

> 1. He may, if he thinks fit, reject the goods and recover what he has paid.
>
> 2. He may accept and keep the goods and sue for the damages he has suffered by the breach of the warranty.
>
> 3. If he has not paid the purchase price, he may set up the damages he has sustained in diminution of the price.

If the buyer decides to reject the goods and rescind the sale, he must do so within a reasonable length of time. If the seller refuses to take back the goods, the buyer may bring action to have the sale declared null and for the return of what he has paid, and meanwhile he holds the goods as bailee for the seller: that is, he holds them at the risk of the seller, and if they perish through no fault of the buyer he is not liable for the loss.

IV

The fact that a buyer of machinery has signed a memorandum indicating satisfaction with machinery delivered to him is not conclusive against him on the question whether the machinery was in the condition represented by the seller, the memorandum being merely evidence to be weighed against the buyer in case of controversy. Failure of the buyer of a machine to give notice in writing within ten days of discovery of a defect, as required by the contract of sale, does not preclude him from rescinding his purchase on account of defects of which the seller had actual notice. But under a contract calling for a sale of two machines, and expressly stating that the agreement shall be divisible as to each, failure of one to come up to the warranty under

which it was sold does not entitle the buyer to cancel as to both, if the other does conform to the warranty and can be used without the defective one. This decision was handed down by the Washington Supreme Court in the case of J. I. Case Threshing Machine Co. *vs.* Scott.

In those jurisdictions which do not allow the buyer to rescind for breach of warranty, but require that the buyer keep the goods and bring action for damages, many courts, in order to avoid this hardship, have said that it was a condition of the seller's authority to select the goods for the contract that he should select goods corresponding to the description given, and if he has in any way failed to do so, then the condition upon which he was allowed to select goods and pass title thereto has not been performed, and consequently title has never passed and the buyer is not bound by the contract.

If the title has not passed to the buyer he may refuse to accept the goods if they do not correspond to the agreement made by the parties with reference to them.

The Uniform Sales Law on this point provides:

> Where the property in the goods has not passed, the buyer may treat the fulfillment by the seller of his obligation to furnish goods as described and as warranted expressly or by implication in the contract to sell, as a condition of the obligation of the buyer to perform his promise to accept and pay for the goods.

This principle is in accordance with the rule of practically all jurisdictions whether allowing rescission for breach of warranty or not.

If a buyer offers to buy coal of a seller, and the seller sends him coke, he does not perform his contract; but that is not a warranty; there is no warranty that he should sell him coal; the contract is to sell coal, and if he sells him anything else in its stead, it is a non-performance of it. Should the parties, according to the Uniform Sales Law, expressly state that the performance of certain acts or the furnishing of certain described goods should be a condition of the passing of title to the goods, then all courts would observe the contract which the parties had made. The non-performance of the condition thus made would prevent any liability from being assumed by the buyer as much as in the case where an article of a different kind is sent.

When a buyer and seller contract for an identified article, they mean only this particular article, and the furnishing of this identified article is a condition precedent to any liability on the buyer's part. Should the seller furnish another article of the same kind and quality under the terms of such a contract, it would be just as much a non performance as if an article of an entirely different character were offered.

With the facts and laws about warranties given in this brief article every executive should be familiar.

SOLVING THE PROBLEM OF SEASONAL GOODS

BY PAUL M. ATKINS*

TO have 90 per cent of one's business concentrated on two days of the year, or even to have a like amount limited in time to one month would cause most business men to throw up their hands and say that they would have nothing to do with any such undertaking. Yet such was the condition which confronted the walnut dealers in the first instance cited until very recently and which faced certain manufacturers of toys until a few years ago. These two illustrations are simply extreme examples of the type of problem which challenges many a business man whether he is a merchant or manufacturer.

The seasonal industry is one that brings problems in its wake for all who come in contact with it. The business manager on whom the responsibility falls for the success of his concern is only one of those who have difficulties to meet because of it. It is a well-recognized fact that the workers in such industries have to face periods of little or no employment when frequently the problem of getting enough to live on becomes acute. In some instances they are paid, as are the bricklayers, on the basis that the period during which they can earn is limited. They, therefore, receive a higher daily rate during the busy season on that account. In other cases it is possible for them to change to some other seasonal occupation which is busy during the time when their principal line is slack. This may solve the problem for them, though it does not usually solve it for the managers. In some cases, the whole business, management and workers together, picks up and moves. We find an example of this in the case of certain hotels in London where the organization of the hotel migrates with the season from London to the Riviera and back again to the English watering resorts. In other instances, however, the results are most unfortunate for the workers as is the case where we find that in one city the amount of prostitution rapidly increases during the season when the girls employed in a certain seasonal occupation are out of work. In most instances, the seasonal character of a business is a cause for anything but rejoicing on the part of those employed in it.

The manager of a big business of this kind certainly finds nothing to cheer him in that phase of it. His organization is often broken up, fixed expenses pile up, his plans for the future cannot be made with any definiteness, and worry and uncertainty are his lot on account of it.

If we pause to consider the public, the people who have to pay for the goods in the long run, we find that it suffers also by having to pay higher prices for the articles of this class that it buys than if this condition were not a fact. If the goods are to be produced and distributed at all, there must be sufficient profit in the long run to make it worth while for the owners to stay in business. If the burden must all be earned during a very brief period, the amount that each article produced or sold during that time must bear is greater than it would be if the production and dis-

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tribution were continuous. Hence, inevitably the price is larger to the consumer, and we are all affected thereby since there are few of us who are not consumers of seasonal articles to a greater or smaller extent.

We are all, then, manager, worker, and consumer, interested in the solution of the problem which seasonal goods presents, if a solution of some kind be possible. While we are all interested in this matter, the practical working out of the problem falls almost entirely on the shoulders of one class of us—the managers—and it is to them, therefore, that this article is principally addressed, though it is hoped that it may prove to be of interest to others also, especially the public, for not infrequently any real and permanent solution depends on a change of habits or customs on its part.

The material which is to follow is the result of a rather extended investigation which has covered quite a period of time. Originally it was begun at the behest of a client to aid him in reaching a solution of the problem as it confronted him. The subject was so fascinating, however, that the investigation has been carried on since at odd moments, and much of what appears here is the by-product of other work and of conversations with many men on other topics. One of the interesting discoveries which was early made was that the subject, though an important one and so recognized by many business men, was not one about which much had been written. There are a number of cases of descriptions of methods worked out by individual companies, but even along that line there is comparatively little information to be obtained in print. Practically nothing has been published about the reasons for seasonal goods and the general methods by which the problem may be attacked. The endeavor has been made, therefore, to outline both the problem and the general methods for its attack, and then to illustrate these methods by practical examples taken from published material as well as from personal experience, in the hope that not only will individual business men be helped in solving the problem as it confronts them by developing new methods from the suggestions offered here, but that this summary of the whole situation may serve as a basis for further investigation which will result in far more fruitful results than it is possible to present here.

Before the problem can be really grasped, it is necessary to consider what are the underlying causes for the seasonal character of many lines of goods. As the name would indicate, the prime reason lies in the climatic changes that take place. In certain seasons, some goods are naturally not needed, and hence the demand for them falls off. When the balmy days of May arrive, it is difficult to convince the average man that it is necessary or wise to buy a new stove or even to order some more coal for the coming year. When the snappy days of October come round, baseball bats and gloves become a drug on the market till spring days once more appear. As we pass from one season to another there are a host of things whose necessity to us varies from zero to 100 per cent, and our demand for them varies in proportion. Closely allied to this factor of climatic change is another natural cause for fluctuation in demand, the alternation of day and night. Telephones which are a vital necessity to the business man all day are very nearly worthless to him at two A. M. If the use of the telephone could be distributed over the twenty-four hours instead of being limited to about sixteen, with most of its use concentrated in about four hours, it would be possible to furnish better and cheaper service.

There are also certain elements which may be grouped under the head of custom, habit, and style, that cause a periodic frequency in the demand for goods. Clothes and millinery are an example which may be placed in the class which is controlled in large measure by style. True it is that the seasons play an important part here, but the seasonal character of these articles is vitally affected also by the style factor, especially in the case of women's clothes. Garments which have hardly been worn are thrown aside for others in order that the wearer may be habited in the latest mode.

The factor which we may call custom is one that causes large sales of some goods at one time of year and their neglect at other seasons. An example of this may be cited in the Christmas custom of exchanging gifts. The toy trade is built around this time of year and all its plans for business are laid on this fact as a basis. The custom which has extended till very recent years of considering cranberries and walnuts as foods whose consumption was only appropriate on Thanksgiving and Christmas made of those standard dishes articles of the seasonal variety. The habit of sending clothes to the laundry on Monday is well established and as a result we have a weekly fluctuation in this business to obviate which some laundries have gone to considerable trouble and pains.

There is another element that frequently affects the seasonal character of goods—their quality. Heavy, rough boots such as are worn by farmers or mechanics, for example, are a relatively stable product, but the dancing pump of milady is one of the most seasonal articles that curses the business world. In general, we may say that the higher the quality, the more seasonal the goods.

Still a different element that affects the seasonal quality of a business is the scale on which production or distribution is carried on. We see that illustrated by the garment industry. It is the little fellow in this line who alternately works his force overtime and lays them off altogether. The reason for this is that the small business lacks the capital to make changes which will permit continuous operation. It has not the money to buy a little additional machinery to aid in the production of some side line, nor does it have sufficient capital to permit carrying several lines of goods. Neither does it possess adequate financial backing to enable it to secure the best-trained persons for the solution of the problem in the form in which it comes to them.

One more factor needs to be mentioned in the list of those affecting the seasonal character of industries—the degree of specialization that exists within it. The more highly specialized an industry is and the more subdivided into detailed operations, the less flexible it is. When machines are designed for only process or size of product, it is not possible to adapt them to others in a moment. Even though the machinery may be adaptable, it frequently occurs that the employees are not, because they have learned only one small part of the work to be performed. It has been found, for example, that workers who are expert in the fabrication of cloaks cannot, in general, make shirt-waists without a rather long period of apprenticeship.

All of these are factors which are met with when dealing with the problem of seasonal goods. This problem in whatever form it appears, should be analyzed to see what the factors are, for until the underlying elements are known, no solution can be worked out, and guessing is a poor substitute for a scientifically developed solution of a probblem. Depending on the information gained

by this analysis, the solution may prove to lie in a changed sales policy, a change in the kind, quantity, or location of advertising, a development of foreign trade, an increase in the financing and warehousing capacity of the business, or by a development of the means of production. Each of these possible solutions will be illustrated in turn, and many of the examples given are very suggestive and bring great credit to their originators.

Advertising is one of the most popular ways of meeting the problem of seasonal goods. To present the desirability of one's merchandise to the public more frequently and in a different way is considered by many one of the best means for bolstering up a slackening market. The point of application of the advertising is often quite as important as the kind and quality.

A mail order house, for example, traded on the idea that summer hotels and boarding-houses were often in out-of-the-way locations where the guests could not get with ease the articles to which they were accustomed, and hence it made a point of sending its catalogues to a list of summer resorts each summer and in this way succeeded in attracting not a little trade during the dull season which would otherwise have been lost.

Foods have always been one of the classes of articles most subject to seasonal fluctuation because in many instances they are perishable. It sometimes happens that other factors are the cause of their seasonal character. Till very recently, walnuts were practically unsalable except at Thanksgiving and Christmas. The walnut-growers got together, however, and by a well-directed educational campaign have built up an almost all-the-year-round sale of their product. The seasonal element in the business is now furnished more by the natural limitation of production than by the demand for the product.

While on the topic of educational campaigns, it may be well to note the case of the toy industry. Toys are very largely a Christmas business, but one class of toys has lost some of its seasonal character by advertising. The instruction value of many mechanical toys has been so well presented that there is a small but more or less constant demand for them now all the year round from parents who buy for this reason alone.

We are familiar with the round bun or biscuit with a cross baked on it that is sold everywhere on Good Friday. In one large city, a wholesale baker conceived the idea of extending the season for this delicacy from one day to the whole of Lent, and by judicious advertising was able to build up a remarkable increase in sales and establish a new custom in his community.

The present enormous sale of citrous fruits from both California and Florida has been developed by able advertising. Formerly considered as foods for only a few brief months of the year, oranges—and, to a lesser extent, grapefruit—are now consumed almost all the year round. Not a little of the effort of these advertising campaigns has been devoted to teaching the public that these fruits have a very real health value which takes them out of the class of luxuries and makes them in many instances virtually a necessity.

The American Cranberry Association advertised extensively the value of cranberries as a food. The whole history of this berry has been very much like that of walnuts. From being a twice-a-year dish, cranberries are used as a jelly all the year round, and as a sauce during many months.

Sweet potatoes is another food product which has had its season greatly extended. This is partly due

to the development in the methods of preparing the article for the market which assures its better preservation, and partly to the advertising which has been carried on.

When we turn from foods to clothes, we find a number of examples of the value of advertising in solving the problem before us. Advertising has built up an almost all-the-year sale for B. V. D. underwear even in the northern part of the country. It has been pointed out that there are many men in the northern cities who live indoors all winter during most of the day in a temperature which is summer-like. It has been shown that it is much more healthful to wear light-weight underwear under these conditions, and to put on heavy coats when outdoors than it is to wear woolen underwear.

A manufacturer of clothing has made a determined attack on the style factor, and has changed the advertisements of his goods from calling attention to particular styles to emphasizing the importance of "style" for men and women who wish to be well dressed. In this way, he has done much to reduce the seasonal demand for his goods, but at the same time he has built up a larger and more discriminating clientele for his garments. In all his publicity he has called attention to the desirability of being appropriately dressed in respect to both the occasion of the moment and the personal characteristics of the individual.

A dealer in furs located in a city through which a large number of vacationists passed advertised extensively in the spring and summer months and succeeded in selling many garments to the tourists. Particular attention was called to the fact that the location in that city gave the firm an unusual opportunity to select the best furs.

There are other ways of pushing sales than by advertising and many of these are effective under certain conditions. Increased sales effort may be all that is needed to do away with much of the seasonal element in some industries. Not a little of the slackening in business, especially in the summer months is due simply to the fact that it is the season for vacations, and the manager of the business takes a vacation from his duties though he may continue to come regularly to his office every day. A few illustrations of additional sales effort skilfully applied may offer some helpful suggestions.

A manufacturer of corsets found that the regular line of corsets was not adapted to summer wear, and, after long experiments, developed a summer corset that found favor at once with his customers. Since that time, he has not had to complain of dull business in summer but has been able to maintain his business at the usual level.

It is a well-known fact that people dislike to make decisions and avoid doing so whenever possible. Perhaps this is no more frequently found than in the matter of selecting a book to read. A book dealer took advantage of this fact and pushed the sale of vacation packages of books which found a ready sale during the summer. Several groups of books were put up, varying in price and choice of books so that all purses and tastes could be accommodated. The choices were made with so much skill and such good judgment was shown in advising customers in their purchases that not a little good-will was built up, and instead of being a dull season, the summer months more than held their own. It is worth while noting, perhaps, that not a little of the attractiveness of this method of purchase was the element of surprise to be enjoyed by the customer on opening the package.

One way of keying up the sales force during the summer months is that which has been used by the Burroughs Adding Machine Company of having special salesmen's contests during the summer season. This adds to the interest of the salesmen just at the time when the tendency is to slump in the work and to lose the push that is needed to make sales under adverse conditions.

A jewelry dealer pushed his summer business by making a special effort to secure the opportunity to supply trophies which were given at the athletic contests held in his town during the summer. Whenever possible, he arranged to exhibit the prizes in his store window before the contests took place, and after the awards had been made, he found a chance to sell to the winners when they came to the store to have their names engraved on their cups.

An ice company found that few women knew the possibilities of the use of ice, and they greatly increased the sale of their product during the winter months by employing demonstrators to show the uses to which ice could be put in addition to serving as a preservative for food.

One of the most interesting examples of sales energy used in pushing a product during the off season is that offered by the automobile dealers in a certain country county seat. They combined to buy a snow-plow and plowed out the roads during the winter when the snow was so deep as to seriously interfere with communication by auto. This service was used as a basis for urging the purchase of autos during the winter rather than to postpone their acquisition till spring.

The cutting of prices or rates to stimulate business during the dull period often offers the best solution of the problem of seasonal goods. It obviates the necessity for additional selling expense which might otherwise be required to maintain the business and it not infrequently aids in balancing up the equipment or the use of labor in a way that could not be done in some other fashion.

We have a very well-known example of this kind in the case of the telephone and telegraph companies with their night rates which offer substantial reductions from their day rates. This has done not a little to promote the use of their equipment at a time when it would otherwise be left idle.

In some localities where electric current is used primarily for lighting purposes the use of equipment has been balanced up by the reduction of the price for current used for power purposes. In some cases also it has been found possible to extend the same plan to current used for the operation of domestic machines.

It is a pretty thoroughly established habit with most housewives to send their washing to the laundry company on Monday and to expect it back sometime during the latter part of the week. One company found that it could avoid this fluctuation which resulted in some of the equipment of the laundry remaining idle during a part of the week, by offering to do at a slightly lower rate laundry received during the last three days of the week to be completed the first of the following week.

In the smaller cities and towns it is a well-recognized fact that the barber trade is always very light on Monday. Men as a rule do not come for tonsorial attention on that day. One barber conceived the idea of building up his Monday business by offering lower rates for cutting the hair of boys on that day. This also did something toward relieving the congestion on other days, notably Saturday, which is always crowded in a barber shop.

A fertilizer company whose business was always very brisk in the spring and early summer evened its trade and saved itself storage and interest charges by selling its product at a somewhat reduced price in the fall. At this time most of the farmers had sold their crops and were in a position to buy, and hence the price reduction made an appeal to them which was usually effective.

The custom of having "sales" of goods of all kinds during the off season is so common as to need no description here. In general, it represents poor judgment on the part of the buyers who have overcalculated the purchasing capacity of their trade during the regular season. If the goods are left, they must be disposed of even at a loss, but good judgment should be exercised so as not to have goods left over.

Where the seasonal character of a mercantile business is so well established, and the expense of changing it by any of the above-described means is prohibitive, it is sometimes possible to maintain the business as a whole by the addition of supplementary lines. Such a plan offers certain problems which are sometimes important. It is not always easy to adjust the equipment used for the sale of one line of goods to the sale of an entirely different line. More difficult still is it to train employees who are skilful in the sale of one line to be equally skilful in the sale of something entirely different. If it is necessary to have two sets of employees at different seasons of the year, much of the benefit otherwise to be gained is lost. However, where the equipment may be used and the same sales force can handle the two lines, this method offers real opportunities.

An excellent example of this kind of thing may be found in the merger of an ice company and a coal company. Much of the equipment is usable at all seasons of the year, and the employees may be kept constantly at work. In many places it may be noted that this combination of the two seasonal industries has been made with lasting benefit to all concerned.

For a long time, the soda fountain equipment of the corner drug store was allowed to go unused in the winter when the demand for iced drinks abated, but in recent years, the sale of hot drinks of various kinds has done much to balance this trade. Perhaps since the last amendment went into effect, we can say that still another kind of drink has helped to keep the clerk if not the equipment busy.

The combination of goods that are sold in the same store in order to avoid a seasonal fluctuation in the business as a whole is very varied. We find, for instance, that a clothing store sells sporting goods during the dull season, that a hardware store pushes the sale of fishing and hunting equipment and camping outfits to tide over the dull period. A fur store carries a line of men's and women's garments during the off season, and another sells laces, gloves, millinery, and men's hats. A seed merchant deals in honey at a time when seeds are not in demand, and we find a wholesale grain dealer who sells motor boats during the summer. A carriage store in the country sells lightning rods, silos, and farm lighting systems in the summer, while a firm of city real estate operators transfers its attention to the sale of farms in the summer.

We are all familiar with the packers' effort to enter the grocery trade, but it is not so generally known that they did not find it so profitable as they had hoped and expected. This instance illustrates the fact that the addition of outside lines must be undertaken with care. Particularly this is true when the addition means the building up of a different force of salesmen. The packers found that their regular salesmen

who could dispose of their own line to good advantage did not do so well when they tried to sell something with which they were not familiar.

There remains one other way of meeting the problem before us, which comes in the class of developing the distribution of the product. The foreign market is one about which the American business knows comparatively little with a few conspicuous exceptions. The possibility of finding a way of eliminating the seasonal element in a business by the development of foreign trade is one that offers great possibilities to those who can work it out. It must be borne in mind that the seasons in the southern hemisphere are the exact reverse of ours, and while we may be wanting electric fans, the man on the other side of the world may be wishing just as earnestly for a fur coat. On the other hand it must be borne in mind that it takes a long time to ship goods from the United States to any point in the southern continents, and hence, that goods must be produced a longer time before they are wanted than is the case in the domestic market. It must also be remembered that the style, size, shape, condition, quality of the products wanted very frequently vary radically from what we use here and hence what is virtually a new product must be turned out. Foreign trade offers a way out of the problem of seasonal goods if the conditions are carefully analyzed beforehand and the situation carefully weighed.

Farm machinery is a seasonal product, the demand for it coming in the spring of the year. One of the largest American producers of this kind of machinery has a surprisingly large part of his orders come from foreign countries, and by a careful planning ahead of the work the factory is kept fairly constantly occupied.

The fact that the seasons are reversed in the southern hemisphere has made possible the building up of an important trade in certain garments, notably furs and underwear. Whether this will continue to be a profitable means of meeting the problem of seasonal goods depends to a large degree on the development of industry in these newer countries.

One of the most interesting of the examples of foreign trade to meet the difficulty of seasonal goods is that offered by the prune-growers of California. During a season when they found themselves overstocked they turned to outside countries to find a market and were able to dispose of a large part of their surplus in Brazil. This has resulted in the building up of foreign connections in various directions that have materially aided their business.

The possibilities in the line of foreign trade are very problematical at this time. With the rate of exchange against us and with the probability that it will remain that way for an indefinite length of time, it is doubtful if this solution will be available for some time to come. However, there is a way out of the difficulty which will bear watching, especially with a return to normal business transactions with foreign nations, which is sure to come.

There are some kinds of business that are not susceptible to any of the methods described above, and which cannot force the sale of their product by any means which can be utilized at a reasonable cost. It sometimes happens that the only way out of the difficulty which their seasonal product presents to them is by storing it throughout the year till the season comes when there is a demand for it. This means that they must be possessed of adequate warehouse facilities and ample financial backing. Without both, they are not

in a position to maintain continuous production over any extended period of time. It must be borne in mind, however, that a choice between adding to the equipment required in order to produce to meet requirements during the limited period when there is a demand, and constructing large storage buildings may not infrequently be very much in favor of the latter method. Buildings for storage purposes only, often do not need to be heated or lighted and need only furnish protection against the elements. In some instances, not even a building is needed, only a shed, and not always that. In that case, if the product is more or less standard so that changes in style are not likely to destroy sales, it may well prove wise to make and store and pay the interest charges that may be necessary on the borrowed money.

The sewer-pipe industry is one that falls very distinctly in this class. The demand for sewer-pipe comes almost entirely in the spring and early summer when new roads are being made and old ones repaired. The manufacture of sewer-pipe requires both time and rather expensive equipment and it would be quite impossible to make all that would be needed during the season when it can be marketed. It is, however, very easily stored in sheds or even in the open, so that storage charges are very low. It is standard and is always salable at some price so that even on a falling market the danger is not great. Hence, warehousing and financing has proved to be the best method to enable this industry to operate almost continuously all the year round.

The spring-time is the open season for other things besides spring (?) lamb and poetry. It is curious to note that most of the demand for milk cans comes in that season also, and one solution to the seasonal problem presented is the one we have just been discussing. Another company in the same industry used another method which will be described later. In this case the solution is not quite so obvious as it is for the sewer-pipe industry. The warehouses have to be of a much better construction and the machinery used in the production of milk cans can be used for making other things. Still this way out of the difficulty is a possibility.

An article of food that fluctuates in price very considerably is the necessary egg. The price changes from May to December are very material and are the direct result of the expanding and contracting of the supply. We are all agreed that we prefer a new-laid egg to the storage variety for our breakfast, but it is a well-known fact that storage eggs have the same chemical composition as the new-laid variety if they have been properly preserved. A certain grocer undertook to stabilize this part of his business and at the same time aid both his customers and those from whom he purchased by offering to sell eggs at the price of the day, plus some small storage charges, to be delivered at any time during the coming eight months. This enabled him to sell a great many more eggs than he could otherwise have done, at no extra risk and to make a small but substantial profit on the transaction while aiding both his customers and suppliers. It was a simple case of warehousing and financing.

There is still another method of attack on the main problem which we have before us for consideration, and one which offers great possibilities for the future, for it is one that has never been adequately developed in the past. By developing production in the seasonal industries we have a way of doing away with many of the difficulties. In some cases the development of production may take the form of improvements in the methods of pro-

duction or in others it may take the line of diversification of the goods produced. In any case, the careful analysis of the equipment used by an industry and a thorough study of the processes employed have the possibility of finding some clues for the solution of the problem.

For a long time it was thought to be impossible to carry on construction work during the winter on concrete buildings. The accidental discovery that concrete which was frozen in setting was even better than that which was not, and further careful study of the problem of building in the winter has made possible the carrying on of construction work all the year round even in the northern part of the country, and now much of the seasonal element has been eliminated.

The diversification of products offers perhaps greater opportunities. The fact that business as a whole is almost always duller in the summer than at other times has meant that there was not so active a demand for paper tags during that season as during the rest of the year. A manufacturer of tags has now supplemented his regular business by the production of paper napkins for which there is an increased demand in the summer for picnic parties.

The canning season is usually rather brief, lasting at the best only a few months of the year. Following the various fruits and vegetables through the season, the season can be greatly extended over what it would be if only one article were preserved. One canning company has found a use for its equipment and employment for its workers by putting up baked beans, hominy, soups, and such articles in the winter, using some of the products that it canned in the summer and fall and in addition other vegetables that do not need preservation.

The garment trades have always been considered one of the most seasonal of all industries. Two or three illustrations of how some garment concerns have solved their problem by varying their production may not be amiss at this point. One manufacturer of men's suits fills out the in-between seasons by making two different weights of blue serge suits of a standardized model. Blue serge suits are always salable, and since he is able to make a special price to the merchant as a result of making them in this way, he does not find any trouble in disposing of them.

Another manufacturer of ready-made men's clothes has solved the problem in a somewhat different way. In order to have the ready-made clothing on hand at the beginning of the selling season it was necessary to manufacture them some time beforehand. This meant that during the busy selling season the garment factory had little or nothing to do, so this manufacturer undertook to make made-to-order clothing during the selling season. Many merchants sell both ready-to-wear and made-to-order suits, and he was able to obtain orders from many of the merchants to whom he sold his principal product.

One of the serious problems before any garment manufacturer who wishes to diversify his product is the lack of skill on the part of his operatives on any but one line of goods. If this difficulty can be met and overcome by training, the solution of the problem of seasonal goods is often not so difficult. A maker of women's garments found that by careful planning of his work among skilled workers he could keep his factory busy all the time. It is interesting to note the wide variety of product which he turned out—house-dresses, dressing-sacks, wrappers, kimonos, aprons, maternity dresses, pet-

ticoats, women's sanitary appliances, millinery, garters. If space permitted, the discussion of how this manufacturer developed his business to this point would be very enlightening.

It was mentioned above that there was another method than warehousing and financing to meet the problem of the milk-can industry. One manufacturer who started business with milk cans as his principal product has found that he can make coal-scuttles with the same machinery, and now he has a second line of goods which is as important as the first.

Educational advertising has been mentioned as one of the ways of inducing the sale of mechanical toys for which Christmas marks the high-water mark. A producer of such toys has found that he can turn out electric fans to good advantage, and now he keeps his factory busy through the spring and summer months on this product until it is time to begin to stock up for the Christmas trade.

Base-ball bats represent the beginning of another company which finally balanced its production and sales by the addition of hockey sticks and kitchen chairs and tables. The bats and hockey sticks require the services of salesmen expert in the sporting goods trade, and the two lines keep them busy about all the year. The tables and chairs are sold on a price basis, largely on contracts arranged by mail, and were used to keep the wood-turning and bending machinery busy when not occupied with the athletic goods.

The ingenuity of some manufacturers is really quite remarkable. We find, for instance, that a manufacturer of rifles fills up the dull season between wars by the production of a wide variety of sporting goods, and that another manufacturer of the same class makes toilet articles.

A manufacturer of electric flat-irons added quite a number of other domestic apparatus to his line to fill up the dull seasons of his business, and we find that makers of automobiles manage to keep their factories much more fully occupied now that there are sedan models to be produced for winter use. Perhaps the most versatile manufacturer that was found during the investigation was an Englishman who started out as a bicycle manufacturer but who now produces in addition motor cycles, roller-skates, gramophones, and parts of wheels and motor cars.

Before closing this article, it may be well to sum up briefly the methods of approach to the solution of the problem which we have been considering. We have seen that there are three principal plans of attack, through distribution, financing, and production. In the first case there are a number of subdivisions into which the individual methods may be grouped. They are all based, however, on the idea of pushing the distribution of the product which is seasonal or by supplementing that product by the sale of some other in order that the business itself may go on without interruption.

In the second case—the attack through financing—we have the method which is probably the least desirable of all except for certain particular instances, and yet it is the one to which the business man often turns first of all when confronted with the problem. It is the one which calls for the least mental effort on his part, the one that needs the least imagination in conception and the smallest amount of daring in execution. In general, it should not be considered until it is clearly impossible to work out the problem along either one of the two other lines.

Probably the last of the three methods is the one which has received the least consideration from the business man and yet it is the one which offers

perhaps the best possibilities in the long run. The reason for this is probably found in the fact that few business men have had sufficient engineering training to understand the possibilities of machinery, and most engineers, while trained in the development of machinery to meet certain defined needs, never have had very much experience or training in the adapting of machinery already constructed to other than the purposes for which it was originally intended. Not a little of the lack of progress in this direction is also due to the fact that so much of the machinery in use in this country is so highly specialized that it does not lend itself readily to adaptation. This brings us at once to the question of how far it is desirable to use special machinery—but that is another topic which requires quite as much careful thought as the one that has been under discussion in this article and which must be left to another time.

In closing it may be said that the solution of the problem of seasonal goods depends in the first place on the careful analysis of all the underlying factors. In the second place, it is based on a thorough study of the various classes of possibilities to see which one offers the best means of dealing with the factors which the analysis of the particular problem in hand has brought forth. With this information at hand, the business man is equipped to undertake seriously and with excellent chances of success the task of working out a method to suit his own particular need. When this stage is reached, a consideration of what other business men have done under like circumstances often proves very helpful, but the attempt to operate some plan which has proved successful elsewhere without previous analysis is likely to come to grief through the meeting of some element which, in the application of the method in the previous case, was not encountered. It is hoped that the suggestions offered here and the examples which have been recorded will be helpful to the readers in working out their own problems of this nature. The article cannot and does not pretend to offer a solution of all the forms of the problem which has been and is one of the most serious which a large proportion of the business world has to face, but it is intended to present the principles underlying the problem and to indicate how these principles have been applied in a wide variety of instances.

BUSINESS CONDITIONS IN GERMANY

BY MERCER P. MOSELEY*

ENTERING Germany by any of the Continental gateways, the American business man is immediately impressed by the enhancement in the purchasing power of the dollar. In France, for example, and in particular, a dollar is hardly a dollar, but in Germany the dollar commands up to ten times as much both in services and in goods as it does in France and several times as much as it commands at home.

My first impressions of post-war Germany were therefore, by contrast, more than favorable, although I had been led to expect considerate treatment of the dollar as well as of myself, for the Germans are leaving nothing undone in their efforts to win back the esteem of America. They are more than anxious to re-establish trade relations and are quite frankly committed to the hope that America will aid, with credit and in other ways, the reconstruction of Germany. I was told that a natural economic affinity existed between the United States and Germany.

High and low, the Germans are courteous and the railway servants seemed to regard themselves as the representatives of the nation in their solicitude for my comfort and welfare, all without undue obtrusiveness and without impairment of a demeanor of self-respect. The railway carriages were comfortable and clean—very clean.

Passing through the Minden Valley on my way to Berlin I was struck by the economical use of the soil, every visible inch of land apparently being under cultivation. Its crops appeared healthy, especially by contrast with those in England, which, when I saw them, had a parched appearance and promised a poor harvest.

The condition of the French crops was very good, comparing favorably with those of Germany. Before the war, Germany imported a large part of her food and may later revert to the old scale of importations, but her food position has improved wonderfully, and under rationing, which is still in effect in some directions, she could continue to maintain a large degree of independence, although at the possible price of reduced production in other fields. France will very probably harvest more grain than she will need, and I was told that the grape crop this year would be the best in her history, not excluding 1911.

Everywhere I looked in the Minden Valley the pastures were dotted with fine full-blooded Holstein cattle. At the moment I do not know the statistical position of Germany in the matter of her stock of cattle, but I can testify that what she has is good. My impressions of the country life in both France and Germany were generally favorable.

Through the courtesy of a train acquaintance, a German manufacturer of some importance, I had little difficulty in obtaining a room at a leading hotel on my arrival in Berlin, although the hotels were crowded and full of bustle and life. My room at this hotel cost me 100 paper marks a day, or about $1.50. A room in a hotel of the same class in Paris cost me 175 francs, or about $14 a day.

For $100 I obtained 7,300 marks, and

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I immediately set out to experiment with the purchasing power of the money given me in exchange for $100. First, I had my hair cut, in the hotel in which I was staying, at a cost of four marks, or about six cents. I then drove from my hotel to the Winter Garden, a distance of about a half mile, in a victoria, and for that I also paid four marks. My room at Cologne had cost me 33 marks or about 50 cents, and a breakfast consisting of peaches, cherries, two eggs, coffee, rolls, butter, cream and jam cost me the equivalent of about 33 cents, but I wanted to see if these prices were the rule or the exception. They were the rule. Everything that can be produced in Germany from her own raw materials, and most things that are produced from imported raw materials, can be bought in Germany for less money than in any other country in the world.

II

Of course, I wanted to know why, and I soon found the answer. In the first place, and the most important, practically everything and nearly everybody in Germany is subsidized by the government. The railroads, which are government owned, are being operated at a tremendous annual loss as a result of inadequate rates. Raw materials of various kinds are being imported under subsidies, bonuses are being paid to the heads of families, and out-of-work doles to the unemployed.

These doles and bonuses are small, almost niggardly, but in the aggregate they swell the tax burden tremendously and seem hardly worth it, the out-of-work dole, for example, being 11 marks a day. But the railroad subsidy in the form of low rates is a serious matter, although Germany has used similar tactics in trade competition for years. Steps have been taken to correct the situation with regard to rates, but they have thus far been made effective only so far as certain classes of commodities are concerned.

For example, the freight on a car of grain from Hamburg to Berlin, a distance of 287 kilometers, is now 2,320 marks against a former charge of 207 marks, while the freight on a car of coal from Essen to München, a distance of 665 kilometers, is 1,413 marks against a former rate of 192 marks. But even the increase in the rate on grain from Hamburg to Berlin does not equal the depreciation in the mark, the mark having depreciated to about one-fifteenth of its former value in Germany, whereas the increase in the grain rate is less than 12 fold. As for the coal rate, its increase raises the rate about 7 fold, or less than half the depreciation in the mark.

The business problem of keeping railroad rates abreast of the depreciation in the mark will be continuous so long as the German Government continues to pursue its present policy of inflating the currency. The effect of continuous inflation on the government's revenue has already made itself felt, and I am advised that the government hopes to bring about partial stabilization in the purchasing power of its revenue and also the restoration of its borrowing power by the adoption of the recently proposed scheme of participation in the profits of corporations. I am unable to see how this result will be obtained with the scheme as I understand it—it seems to amount to a round-about adaptation of the excess profits tax idea designed to inspire confidence in the credit of a government which is not able to command it on its own account.

Freight rates have failed to keep pace with the depreciation in the mark, but their failure is unimportant in comparison with the failure of wages to dis-

count the loss of purchasing power. Ordinary labor is paid from 300 to 500 marks a week, and the wages of the better paid workers have increased only about 8 fold as against a depreciation to one-fifteenth in the purchasing power of the mark. Even at these wages, unemployment is extensive and the government is forced to pay doles to the unemployed. These doles and head-of-family bonuses, together with low rents and other forms of state aid, doubtless lighten the burdens of the working classes to some extent, but the standard of living has been greatly reduced as compared with that maintained before the war and the German worker is being forced to undergo severe hardships.

III

I visited the East Side of Berlin, the section in which the poorer classes live. There I found conditions far below what I had been led to expect. In most of the shops visited I found the shelves bare of goods. Prices were generally out of line with the incomes of those who patronized them. Horsemeat shops were plentiful. There were other indications of extreme poverty, including patched clothes, bare feet, and poor housing. I found families living in abandoned stables, abandoned because they were no longer fit for use as stables. Women walked the streets in their bare feet, and children were never seen with shoes. In that season of the year this did not seem a hardship, although to my eyes it was an unusual sight. The children appeared healthy and normal, but I was told that the hardships which they underwent in the period of semi-starvation in the last days of the war, would eventually find reflection in an increase in the death rate from tuberculosis. Sanitary conditions appeared good, the streets were clean and so were the people. Patches were plentiful, but there were no rags.

The eight-hour day which has been established by law was placed in operation in an effort to divide up the work that is going on and give employment to as many as possible. So far as I could judge, the people of Germany are accepting their hardships in good spirit and as an inevitable penalty of the war. Their leaders have impressed them with the necessity of hard labor as the only way out of their difficulties.

How long they will be content to endure these hardships I have no means of knowing, but it seems to me that the financial policy now in vogue in Germany will eventually force a readjustment which will upset the ambitious plans of her industrial leaders and dissipate the fears of those in this and other countries who vision Germany flooding the world with cheap goods.

USE OF BULLETINS IN CORRESPONDENCE SUPERVISION

BY L. C. WILSEY*

THE term "Correspondence Supervision" has a very formidable sound to many executives, chiefly, perhaps, because it connotes a person with horn-rimmed spectacles who pesters dictators about the use of split infinitives and tries to persuade them that their letters will be improved if they omit the "Cant Phrases."

The expense of a supervisor does not seem warranted to many small firms as well as to some large ones; but there is no reason why some one in an organization—someone particularly interested in correspondence—could not make some sort of analysis of the letters that are being written, and then plan a series of bulletins which would help the correspondents to improve the quality and perhaps the quantity, for once correct habits of thinking and writing are acquired, the output frequently increases automatically.

Reference to the use of bulletins has caused so much interest that it would seem that the subject might deserve some extended consideration. While in a well developed scheme of supervision by one whose only duty is to improve the correspondence of the firm, the bulletin is but one link or phase in the constructive work, nevertheless—properly used—it can be made one of the most effective yet relatively inexpensive factors in developing house tone, creating atmosphere, and injecting real enthusiasm for better letters into the correspondents.

Whether bulletins should be issued on a regular schedule or only as the occasion requires is a debatable point, and one which neither the writer nor his firm has solved, for while both plans have been advocated, the latter has so far held sway.

Out of approximately sixty firms represented at the last convention of the Better Letters Association, more than twenty were using bulletins in one form or another; but not all the firms represented employed "supervisors."

Since, however, bulletins are presumed to be issued for the purpose of pointing out faults and having them corrected, as well as to bring to the attention of the letter writers desirable qualities in correspondence, a thorough survey of the letters of the organization is prerequisite, with an analysis of the existing conditions and a plan which shows clearly the points to be covered in the series of efforts to improve the correspondence, whether it be in diction, tone, grammar, or rhetoric.

While the analysis is being made, it is a relatively easy matter to make a chart of each dictator's outstanding qualities—good and bad—and to plan then and there to help him increase the former and eliminate the latter.

Having discovered the salient defects in the correspondence of the organization it is not difficult to determine how many bulletins will comprise the backbone of the campaign, although as it progresses there will be found occasion for issuing other and additional messages on timely subjects; but the main objectives should never be allowed to escape the one responsible for the improvement propaganda.

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In attempting to remedy defects, it is well to alternate by calling attention to sins of commission and then sins of omission. For instance—of all the series of messages the writer has seen, not one has failed to attack, early and vigorously, the use of hackneyed words and phrases; but not all have pointed out the value of the golden rule in tone or attitude, and other points which the average dictator is likely to overlook in the rush to turn out his quota of replies or inquiries, as the case may be.

Although Goodrich Rubber Company, the Pennsylvania Tire and Rubber Company and a number of others have admirably taken up what are referred to above as "sins of omission," the writer feels more at liberty to quote from his own bulletins on "The Beginning of a Letter," and "The Ending of a Letter," to bring out the point.

The Beginning of a Letter

How many of us write the kind of letter we like to receive? How many, on receiving a letter that pleases us, can say definitely what quality it possesses that our own letters lack?

First impressions are strong, whether agreeable or disagreeable; and, while it is safer to make no impression rather than a bad one, a letter that fails to impress the reader is an opportunity wasted.

Since the first impression is made by the introductory or opening paragraph of a letter, great care should be taken to make it do its full share in creating the desired effect. The opening paragraph should ordinarily contain something of warmth and welcome. Therefore it should almost never be negative and seldom neutral. In the majority of cases it should be positive.

The following examples will, perhaps, make these terms clearer.

Negative Openings

> This will acknowledge your complaint of November 1st, and in reply would say that we cannot understand your attitude in the matter.

> We are unable to furnish the items called for on your order number 2640 from the description given of them.

In the first example the word "complaint" is in itself negative; it has an unpleasant sound. The word "letter" would be an improvement. Then too, the latter half of the sentence proclaims the fact that the correspondent was not looking at the matter from the viewpoint of the other man, but only from his own. This alone would indicate prejudice on his part, and would tend to arouse resentment on the part of the customer. The second opens with a negative idea. The customer does not receive at the outset any impression of an effort on our part to co-operate with him.

Neutral Openings

> This will acknowledge your letter of November 1st. The matter it refers to is now being investigated.

> Your order number 2640 is hereby acknowledged and in reply regret to say we cannot fill it until we receive a more exact description of the items.

The first of these openings is non-committal: a bare acknowledgement, which expresses no interest in the case one way or the other. The second is also colorless, lacking any human feeling or sympathetic touch, although it is less objectionable than the negative statement.

Positive Openings

> Your frank letter of November 1st, has given us no little concern, for we can appreciate just how you must have felt when you received the damaged shipment.

> Thank you for your order number 2640, which was received today. In order that we may send exactly what you desire, we are asking that you refer to our catalog and tell us the number opposite the model you consider best suited to your purpose.

The advantage of the positive opening is that it starts out with the viewpoint or interest of the reader. It is personal, expressing appreciation, concern, or sympathy, as the case may be. The reader is

automatically put in a receptive mood; he feels that his case is receiving individual attention, and that his interests are being carefully considered. Not all negative suggestions carry the word "not." The statement, "You will have little difficulty," could be positively expressed by saying: "You will find it very easy."

Even though a letter is handling a routine matter, it should have a positive opening, for the man who forms the habit of starting all his letters in this manner will not have to put forth a special effort to make the more important ones ring with sincerity.

If the beginning of a letter makes a pleasing impression upon the reader, the chances are greatly in favor of securing the desired results.

Correspondence Supervisor.

The Ending of a Letter

The advantage of positive endings over those that are negative or neutral will be evident from a comparison of the following examples.

Negative Close

> It is absolutely impossible to grant a request of this kind; and we confess we are surprised that you should ask us to do it.

While the request may have been unjustified and unfair, nevertheless we should not use an ending that is curt, abrupt, and discourteous. The example quoted above is practically an indictment of the customer's business principles, which is entirely unjustified on the part of the seller, who should never consider himself as the prosecuting attorney, even though his ethical standards may differ from those of his customer.

Neutral Close]

> We regret that it is contrary to our policy to grant this request, and we hope you will see our position in the matter.

Although this paragraph is much less objectionable than the first, in that the tone is more conciliatory and the blow is somewhat softened, nevertheless it lacks constructive effort. While it avoids, to some extent, affronting the customer, it makes no definite attempt to retain his patronage.

Positive Close

> We know that you would not want us to grant you a concession at the expense of our other distributors; and in view of the explanation made, we are sure you will see that only by adopting a single policy for all and adhering rigidly to it, can we insure fair treatment to every customer.

This paragraph gives the customer credit for having high ethical standards, which is at once a diplomatic stroke and the best kind of rebuke, inasmuch as he has evidently sought an unfair advantage over his competitors. It appeals to his better self, and at the same time puts him in a position where he can not press his request further. In addition, it makes a bid for his continued patronage, on the ground that he may always be sure that no competitor will receive more favorable terms than he.

The last paragraph in a letter is the place to sell the reader the merchandise, policy, service, and ideals of the organization; and this can only be accomplished by making that paragraph positive.

Correspondence Supervisor.

While destructive criticism is often necessary, it is vital to remember that constructive criticism and plenty of examples of "how to do it" as well as "how not to do it" are equally important and essential. The writer recalls a memorandum from our General Manager, complimenting him on a bulletin attacking the use of "cant phrases," but pointing out diplomatically the fact that without some examples of what to substitute for these meaningless forms, the average dictator would feel that he had been bereft of all land marks, buoys, and charted channels. The memorandum went on to suggest that once a month, or oftener, a bulletin be issued which should contain a "horrible example" and a "revised version."

Of course, in the use of "examples"

sufficient care should be taken so to doctor them as to make the disguise complete, or else to invent utterly fictitious ones. In the case of examples of "how to do it," there is no reason—unless a dictator be supersensitive and overmodest—why the specimens should not be used without being shorn of identifying features.

The following single page bulletin was issued as a supplement to our first effort which had as its object the elimination of useless and hackneyed expressions.

Assume that you had written two firms requesting an interview for the purpose of discussing the possibility of representing them in your territory. Which of the two answers below, other things being equal, would create for its firm the more favorable impression in your mind?

March 1, 1920.

Dear Sir:

This letter will acknowledge your favor of the 28th *ultimo* in re an appointment for the 5th *inst.* In reply to *same beg to state* that this date is satisfactory to writer and will hold *same* open.

Enclosed herewith please find price list of our lines. At the *present time* we have no more copies of our catalog, but *would state* that supply of *same* will probably *come to hand* by the 4th *proximo.*

Thanking you for your kind inquiry and *hoping* that our interview will result in receiving *your valued commands, we beg to remain.*

Yours very truly,

March 1, 1920.

Dear Sir:

Thank you for your letter of February 28th, asking whether March 5th will be convenient for a conference on the subject of representation.

It will be a pleasure to see you at this office at 10 A.M. on that day, and to hold the two remaining hours of the morning free.

Enclosed is a price list, the only literature we have available just now. It is too bad that there are no more copies of our catalog, but additional copies have been promised us by April 4th, and as soon as they come in we shall be glad to send you some.

We sincerely hope that nothing will prevent you from keeping the appointment for 10 o'clock on March 5th, and that our interview will be mutually profitable.

Yours very truly,

Both the above examples were entirely fictitious. The B. F. Goodrich Company, on the other hand, in a very effective series of twelve booklets, took extracts from letters which had actually gone out from its home office or branches, and suggested improvements in tone, policy, grammar, or rhetoric as the case might be.

This brings up the question of the length of a bulletin, which must—in the last analysis—be decided by the firm using it. The length may depend somewhat on the make-up; for it goes without saying that one will read a much longer message if presented in a nicely printed booklet than if issued on a multigraphed or typewritten sheet, whether it be letter size or legal cap.

It is our own idea that bulletins should not, ordinarily, exceed 1,000 words in length; and there is no doubt so far as we are concerned, that they are more effective when the paper is of a distinctive color, carrying its own heading, than when issued on plain mimeograph paper with little effort to make them physically attractive.

Style is another quality which must of necessity be determined by the individual firm; but here again wide differences exist among those seen by the writer. Some have been a trifle inclined to slang, others have been conservative, while in our own, an effort was made to find a middle ground which

would neither be stiff and prim, nor over familiar. However, if an error is to be made on one side or the other, the latter would seem safer; for nothing makes a correspondent dislike a supervisor more cordially than a didactic tone in the bulletins and a feeling that he can see only the errors in grammar and rhetoric.

Aside from finding and correcting faults that are characteristic of the individual organization, there are certain faults common to most firms; and as a result bulletins have been issued by many on some or all of the following subjects:

Trite Expressions
Paragraphing
Answering Inquiries
Building Good-Will
The Beginning of a Letter
The Ending of a Letter
Mechanical Make-Up
Service Ideals

Still, one of the most common causes of poor letters is loose or incoherent thinking. The average correspondent seldom plans a letter carefully, and if the result is logical, it is chance rather than deliberate effort that makes it so.

There is, therefore, a big field for every firm—whether it has a correspondence supervisor or not—to give its letter writers some instruction in how to plan letters so that they may have the greatest possible coherence and force.

PRINCIPLES OF PRACTICAL ORGANIZATION

BY LIEUT.-COL. W. C. JACOBS*

FOR the business man of today, the subject of practical organization is one of vital importance. The stress of competition has become so great that it is only those business entities which operate according to well-defined, well-understood, and thoroughly sound principles that can hope to survive and progressively develop. Any business which does not pay due heed to the question of its organization or does not understand the necessity therefor, is bound to find itself sooner or later seriously handicapped in competition with other businesses which are conducted along wiser lines.

It is necessary, before an organization can be planned and put into effect, to understand what organization means and the principles according to which it operates. Organization has been defined as "the connection of parts in and for a whole, so that each part is at once an end and a means." With this definition in mind, we can see that organization deals with the harmonious combination and co-operation of various elements to obtain a common end. Each part of the whole has its well-defined functions and objectives, but never loses sight of the fact that the objective of each separate part is successfully achieved only as it furthers the attainment of the common objective of the whole.

Such a conception necessarily includes adequate supervision and subordination. Responsibilities must be clearly defined and the nature and scope of the managing supervision must be adequately and clearly stated.

*With the Standard Textile Products Company, New York City.

An endless variety of rules which might be applied to organization can be cited. The number of the rules is not so important as an understanding of what they mean and how they are to be applied. The following will be found of general availability:

1. Determine what the purpose is for which the organization is being formed.
2. Provide a final authority at all points where decisions must be rendered and subsequent action taken.
3. Carefully and completely define the authority and responsibility of each position.
4. Assign personnel to positions according to their prospective or demonstrated capacity.
5. Avoid dual subordination. This is a vitally important rule and will be taken up later.
6. Combine disciplinary authority with responsibility.
7. Equalize the burdens of administration.
8. Have no positions from which the outlook on promotion is limited.
9. Provide for flexibility so that any situation may be adequately coped with.

In the endeavor to meet specific needs, various types of organization have been developed from time to time. Such types as functional organization, departmental organization, staff organization, line organization, are well-known and need no further comment. They are all of value under specialized conditions and have a theoretical interest to anyone concerned in the matter of practical organization. The problem at hand, however, is to find, if possible, what type or combination of types will produce the best results when applied scientifically.

Line organization in which responsibility and authority descend from one head to another with decreasing value, is too inflexible and involved to meet the needs of modern business conditions. Staff organization by itself is too specialized and does not contemplate the requisite executive authority. But, if the good features of line and staff organization are combined, we have developed a type which offers all the advantages of both, while eliminating the disadvantages of these types considered separately.

This will be evident if we briefly consider the essential elements of the two types of organization. Line organization is primarily a one-man type, with authority and responsibility successively delegated to subordinates, and supervision and decision successively ascending from subordinates to superiors until the final head is reached. For business this savors too much of paternalistic red tape. However, if the salient feature of executive control is retained coupled with a wise delegation of authority and responsibility in which subordinates are judged by the results attained, this type of organization is of great value.

Staff organization is primarily an advisory type without the element of executive responsibility and authority. It functions according to the formula "Investigation—Analysis—Plan—Presentation." This feature is a prerequisite to the success of any management as no one man can adequately plan for coping with all the varied situations encountered in a modern business. The combination of the line type of organization with the staff type offers the strongest possible line-up with which to meet the opposing forces of active and resourceful competition.

Assuming, then, that the line and staff type of organization will meet our needs, there is a third element which must not be omitted. This is the co-ordinating influence which is absolutely essential in order to foresee and prevent needless diversity of effort.

The United States Government has long understood the value of a line and staff type of organization, although its application may have been largely blundered due to political mismanagement. Each of the cabinet officers is a line official having under him many thousands of subordinates. When the ten cabinet officers assemble at the call of the President they become the President's staff, advising him on questions of policy and so on. In the Cabinet they have no executive authority but receive directions from the President who, presumably, will largely formulate his decisions as a result of these staff conferences. The decisions will then be put into effect by the same cabinet officers acting in their line capacity and charged with executing the directions of the President. The need of the third element referred to above has recently become apparent to the administration in Washington. This is evident by reports to the effect that the position of Executive Secretary to the President is being contemplated. This secretary would have an ex officio position in the cabinet and would be charged with co-ordinating the efforts of the various governmental departments headed by the present cabinet officers. The creation of this position gives evidence of the fact that the line activities of the government have had a tendency to forget their interdependence, there having been an inclination for each one to develop according to its own ideas and to assume functions and responsibilities which in many cases properly belonged to other departments or were duplicated by them.

As soon as a clear conception of the correct organization to meet a need has

been obtained, the next step should be to put this conception on paper in picture form. In other words, a chart should be made showing the organization as it has been conceived. The purpose of the chart should be clearly understood, as a chart which does not give a clear idea of the mental picture is worse than useless for it will give rise to erroneous ideas as to what the organization really is. The purpose of any organization chart is to give in a form easily understood what would be more difficult of comprehension if expressed in words alone. A chart can never take the place of an adequate written statement of the proposed organization, but it will complement this statement and make it much easier to fully apprehend it. The mistake is frequently made of trying to evolve a chart which will include every detail of an organization and show intricate and interdependent functions and relations. The word "chart" itself conveys the idea of a guide and the simpler a chart can be kept the better it will fulfil its mission as a guide for the executive.

In a large and diversified organization it is impossible to present on one chart an adequate conception of the organization and the relation of the different parts thereof, one to the other, and of the rôles that these parts play in the whole. Instead of trying to draw up a single chart of the entire organization, it is much better to make a series of charts, each one showing more in detail some one component part of the preceding chart. In this way we start with a chart showing the fundamentals of the entire organization and then take these fundamentals one by one and chart them more or less in detail, as the need requires. Pursuing this method will give much more satisfactory results and will avoid the wholly unnecessary complexity of many organization charts which are frequently prepared.

As illustrative of the preceding paragraphs, reference is made to the accompanying charts which embody principles which are of general application and only require local modification to suit the particular need of the organization concerned. Figure 1 gives a general outline of an imaginary manufacturing organization. It is a chart of an organization conceived according to the line and staff plan and has the co-ordinating influence referred to before.

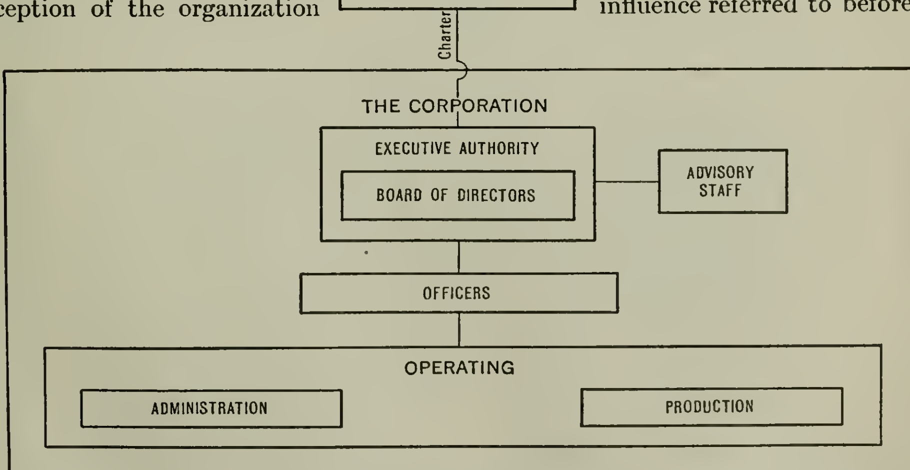

FIGURE 1. CHART GIVING GENERAL OUTLINE OF AN IMAGINARY MANUFACTURING ORGANIZATION, CONCEIVED ACCORDING TO THE LINE AND STAFF PLAN

Figure 2 is an elaboration of one of the elements of Figure 1, namely—the operating element. This, again, is conceived according to the line and staff plan with the co-ordinating influence. Figure 3 is an elaboration of one of the elements of Figure 2, namely, the sales department, and is conceived along similar lines. No attempt has been made to show other than the principles according to which the assumed organization operates. Details can be inserted as needed and will in no way affect the conception of the charts or interfere with their clarity and use.

One beauty of the line and staff type of organization is its flexibility. As these charts will show, this type of organization is based on what might be called the Unit System, in that any number of additional units may be added to the organization and shown on the organization charts without requiring a general reorganization. For example, take Figure 2. Let us assume that the corporation acquired some subsidiary properties which were to be operated in conjunction with the parent organization and under the general supervision of the general manager. The new chart would merely show, in addition to the present information, a third block entitled "Subsidiary Corporations"; and indefinite expansion could be made in a similar manner.

We have referred above to the absolute necessity of some co-ordinating influence of the fundamental activities in any organization. To illustrate this more clearly, reference is made to Figure 4. In this we assume an organization in which the offices of president and general manager are combined under one head and under him are three vice-presidents; one in charge of selling, one in charge of manufacturing, and one in charge of financing. As the chart shows, these three elements of the organization are all of equal importance, but they can only function properly as they take into consideration the functions and operations of each other.

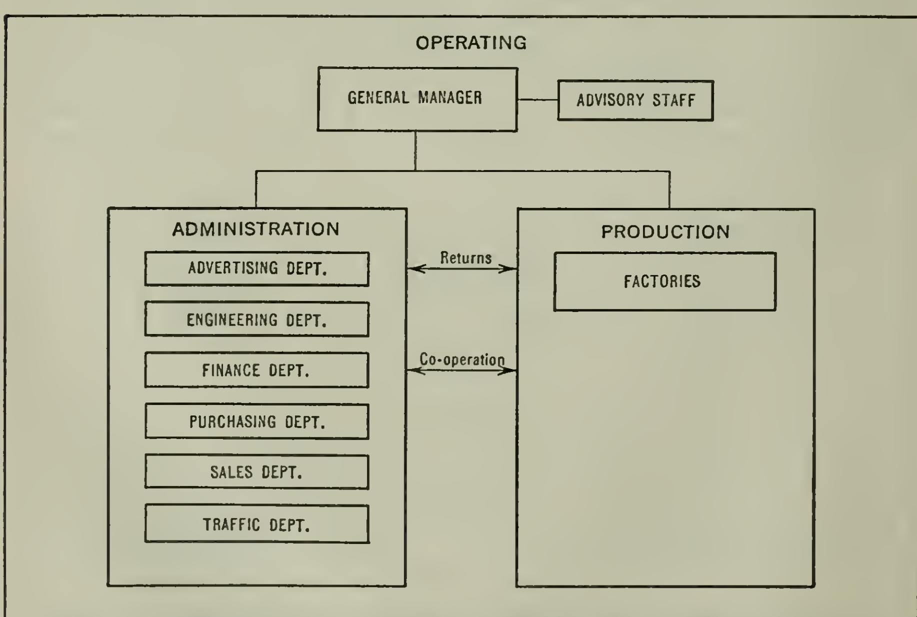

Figure 2. Chart Showing Elaboration of the Operating Element of Figure 1

If these three vice-presidents were to report independently and directly to the general manager, the latter would receive three different points of view which would be based very naturally upon the respective plans and desires of the different vice-presidents. Unless the activities of the selling, producing, and financial elements were carefully co-ordinated, these three elements would have a very decided tendency to act along independent lines, each with its own objective, and the objective of the organization as a whole would be increasingly lost sight of.

The form that the co-ordinating influence takes is not so important as is the fact that it does exist. The circumstances attending each case will decide what this form will be, but the principle that there must be such a co-ordinating influence must be strictly adhered to. On this chart this influence has been indicated as a vice-president and executive assistant who will be charged with co-ordinating the activities of the three elements to the end that the welfare and progressive expansion of the business will not be lost sight of. This chart, expressed as it is in the very simplest form, gives a clear conception of one of the fundamentals of practical organization and one that is too frequently violated by many executives, due to their want of familiarity with the basic principles of organization.

A familiar practical example of this co-ordinating influence is seen in the elevator starters in all of our great office buildings. Without a starter each operator would run as he wished; there would be too many cars at one time and not enough at another; some cars would be overcrowded and others would not be economically filled. In short, the objective to be attained—the safe transportation of the greatest number of passengers in the shortest space of time—would be defeated. But the starter obviates all this confusion. Cars leave when they are properly loaded and run almost on schedule. Undue delay and overcrowding are eliminated. This co-ordinating in-

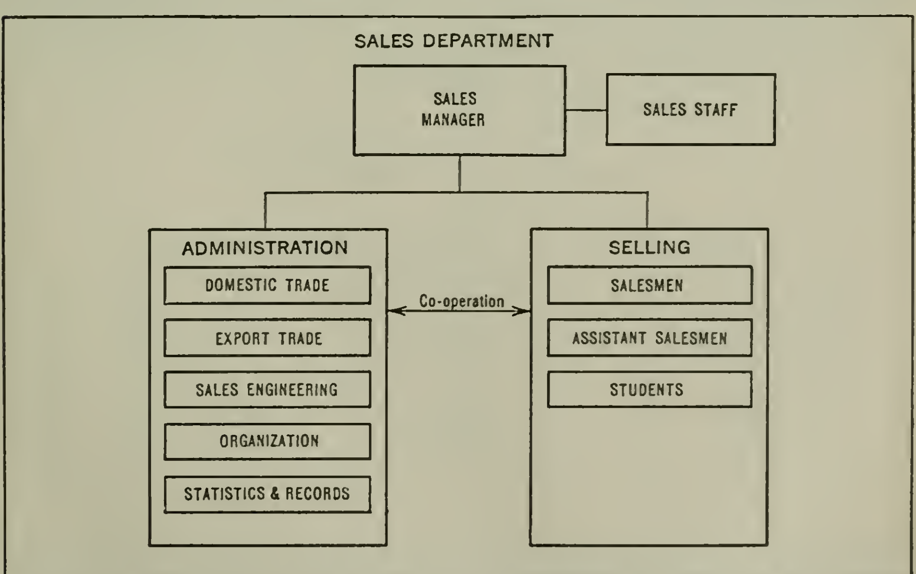

Figure 3. Chart Showing Further Elaboration of the Operating Element

fluence is to business what a speed regulator is to an engine. It prevents well-intentioned but overzealous executives from running away with themselves.

In stating some of the rules which can be applied to organization, mention was previously made of the importance of avoiding dual subordination. In many organization charts which are presented as being representative of those actually in use or recommended for use, it may be noted that various personnel are indicated as being responsible to two or more superiors. Fundamentally, this conception is quite wrong because a division of responsibility and any uncertainty as to where this responsibility lies will always be conducive to doubt and confusion. In connection with responsibility and authority there is also the element of discipline and if personnel is subject to more than one source of authority it is also subject to more than one source of discipline and this fact will inevitably produce inharmonious relations.

Whether or not charts showing this dual subordination are representative of actual conditions is a question. Certainly an organization which has proved its success by surviving and developing during years of active competition, could not very well have contained such a flaw. Also, any charts which are recommended for adoption by prospective organizations and which show this same defect would seem to be erroneously made up rather than erroneously conceived. As has been pointed out before, a chart should be as simple as possible and should serve as an unfailing guide. Doubtless the errors that can be observed in many organization charts are due to the effort to make them show details which do not properly belong there or are a result of the effort to combine in one chart elements which can only be adequately expressed in a series of charts. It is much more charitable to assume that the charts themselves are poorly drawn rather than to accuse the authors of fundamental errors of conception.

On the other hand, dual responsibility, the reverse of dual subordination,

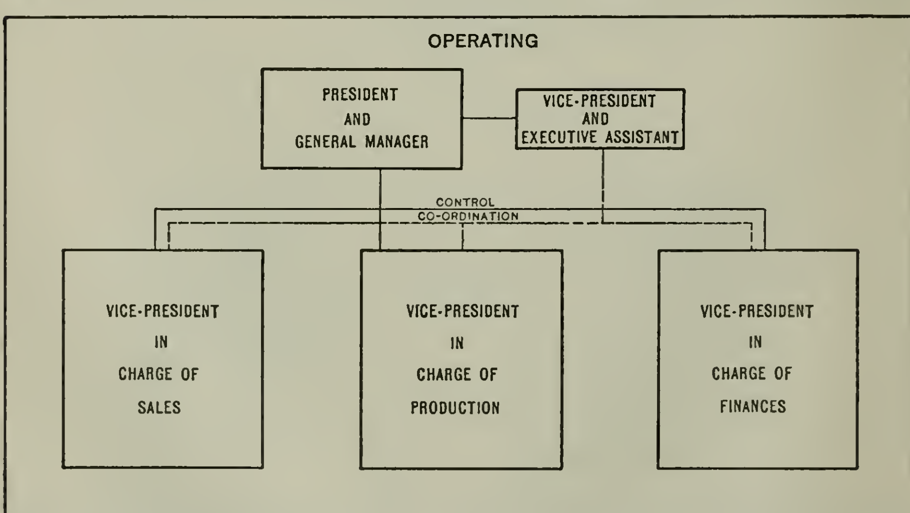

Figure 4. Chart Showing Organization in Which Offices of President and General Manager Are Combined Under One Head and Under Him Are Three Vice-Presidents

is quite possible and very frequently a highly desirable situation in any organization. The line and staff type of organization adapts itself perfectly to dual responsibility when there is any need therefor. For example, referring to Figure 2, we see that the general manager is the head of the operating element. In addition, it would be perfectly possible for him to act as sales manager. In this case we would have the general manager acting in a dual capacity without in any way violating the principles on which the organization is based or changing the chart representing this organization. This idea of dual responsibility is frequently a very necessary one in all organizations, particularly in those in which the expansion is rapid. In such cases the growth of the organization will often outstrip the acquisition of reliable personnel, and those capable of doing so will necessarily be called upon to fill more than one position. In so doing, they simply fit in to the plan of organization as conceived and work as harmoniously in two or more positions as they would in one.

It is hoped that the above brief outline of what is considered as the most promising type of organization for general use will be of help to those who may be struggling with organization problems. The statements made are based not on theory but on actually observed practice which has proved capable of meeting every need. Fundamentals pointed out are scientifically sound and all that is required is an intelligent application of them. It is, of course, to be understood that no one type of organization can be invariably applied to meet all purposes. The object for which an organization is to be formed must be clearly analyzed and understood. This done, the principles of organization can be applied. Any organization which is not at present adequately conceived or which has not yet been developed can put its feet on a firm foundation by carefully applying to its needs the three principles of line control and responsibility, with wise delegation of authority, staff analysis and recommendation, and the co-ordinating influence of line activities. An organization so founded and loyally supported by its personnel will successfully weather all adverse business conditions and progressively unfold to greater activity and usefulness.

ADVENTURE IN BUSINESS

BY NEIL M. CLARK*

IN the early eighties of the last century a young man fresh from college dropped off a train in southern Georgia at a place where the engineer stopped for water. To right and left of him were tall pine trees, growing in aisles so close that even at mid-day the sunlight could scarcely strike through to the ground. Settlers were scarce, and land was ridiculously cheap.

About all that the young man possessed when he left the train were the clothes on his back and a good imagination. Even the clothes were mortgaged, in a sense, since some debts contracted to help pay college expenses were not yet settled. But a man's imagination is never subject to mortgage. And imagination proved to be the young man's chief asset in the career upon which he was entering.

In nearly forty years of incessant work from that day until his death he found that, planning or performing, dreaming or doing, his work was its own best reward. To gain a livelihood was, indeed, his immediate purpose. But he might have found many other ways to make money. He wanted something more. He found it in his struggle with the forest and the land.

What he wanted, and got, adds zest to life and joy to living for all who succeed in finding it. Many men in all ages have gone to sea to find it; others have sought it in tropical wildernesses, in mountains and deserts, in the placid savagery of the South Seas; and still others have looked for it and found it in chemical laboratories, in historical research, in invention, or in politics.

* Author of "Common Sense in Labor Management" reviewed in *Administration* for January, 1921.

It was, and is, adventure.

Perhaps all that the young man did in the Georgia forest seems rather simple. First he bought a turpentine still and installed it among the pine trees. Then he bought a sawmill; in later years he used to say to his associates: "There is no music sweeter to me than the sound of a saw tearing through a log."

A few years after the trees were cut and the land was cleared, the sun, discovering a rich soil, helped to raise huge watermelons, and the man who had cleared the land became known as "the watermelon king" because he invaded all the important markets of the country with his product. In a few years more what had been the silent forest was a rich cotton country. Most of the farmers paying for their land had cause to be grateful to the original owner, for he gave them tangible assistance in many quiet ways.

At last the man who had adventured penniless into the wilderness, died very wealthy. He left many others wealthy or well-to-do because of his vision. The town which he founded possesses today a half-dozen significant industries, and a country store building that is probably the largest and best-equipped in the United States.

This may appear to be a commonplace enough story, merely the chronicle of a typical rural community. And there was, to be sure, nothing compellingly unusual about the community, except that an imaginative mind directed each important step of its progress. Those who knew best the workings of this mind, say of the man:

"He always seemed to be thinking

a little further ahead than the rest of us."

And there lay the essence of his adventure: to create something useful out of heterogeneous and unworked materials; to overcome obstacles and hazards; to choose, among the hundreds of decisions that had to be made at various times, those that led upward and forward. If such an adventure does not strike the mind with its vivid color or intense action, I am certain that it was as satisfying to the adventurer as some of those that do.

All adventure is peculiar in this: when a man ceases to be curious and eager about life, life ceases to hold any further possibility of adventure for him. But as long as there is something to reach out for, some new fact or experience to explore, in that direction adventure surely lies.

Everybody who has observed children knows that the world seldom grows dull for them. Their experience is still limited and it is nearly impossible for them not to be eagerly curious. Everything has unmeasured possibilities. Similarly, wherever a man finds an activity that excites his eager curiosity, and which on that account enables him to satisfy his demand for adventure, there his enthusiasm is and there he applies his best efforts.

There are very few people who do not find in some activity an outlet for their instinctive demand for adventure. But unnumbered thousands today needlessly fail to find adventure *in their work*. They are not only not curious and eager about it, but for many of them it is a positive bore. No sooner are they released each day from the factory or the store or the office, than they hurry away to other occupations that reward them with greater satisfactions. And they give their best efforts to these other occupations. The greatest wastes that occur in business and industry are due, in the last analysis, to the fact that great numbers of intelligent and capable people are not interested in their jobs.

But, it is asked, can many people really take an active interest in their work, and possess an eager curiosity about it? Can business be adventurous?

It can be, and for those who know how to make it so, it is.

Some kinds of adventure require the ability to endure physical hardships and danger; and perhaps it is this sort of thing that most people associate with the idea of adventure. But the opportunities for the modern man or woman to embark upon the adventure of mere place, which is typically the adventure of danger and physical hardships, become increasingly rare. Few places remain to be explored. Few peoples, if any, are yet unvisited. Corners of the world that once were hidden are now crossroads upon the highways of commerce and travel.

But this does not mean that adventure is forever dead. It does mean that adventure must be sought in other directions. There are limitations on the enjoyment of the adventure of place. It is always necessary to go to the place and sometimes that is inconvenient. But another type of adventure, the adventure of new ideas, suffers from no such handicap. It always awaits the adventurer wherever he may be. No type of adventure is more enthralling. And nowhere today is it to be found more easily than in business. The tradition will long persist, no doubt, that true adventure dwells chiefly in the hulls of ships which drop below the horizon. A splendid sort of romance goes with such adventure, to be sure:

. . . . . the black wharves and the slips,
  And the sea-tides tossing free;
And Spanish sailors with bearded lips,

And the beauty and mystery of the ships,
And the magic of the sea.

Life will always be adventurous that way for some rare spirits.

But adventures as fine or finer are to be found in the exploration of new processes and new methods, in the guidance of human relations, in the study of the effect of advertisements, in new machines, in collecting from negligent and contrary customers, in the conflict of making sales. More and more today's adventure-seeker must turn to commerce and industry, or business, because these are the dominating, if not at present the enthralling, interests of the majority. The question is, not how people can get away from business as from a pestilence, in order to find elsewhere the necessary adventure—as some urge—but how to make business interesting and adventurous for more people.

Some make their own adventures. They readily take care of themselves. But thousands of others could find adventure too, if the inspiration to look for it were put in their way. They are not sufficiently analytical to know precisely what they want, nor sufficiently constructive to apply their energies in business to find it, even if they knew. But when the thing is made plain to them, they find it immensely satisfying.

We cannot go on permanently without helping workers to find fresh sources of adventure among the ledgers and lathes. We cannot have a large commercial population that is not interested in commerce for its own sake, but only for the sake of the wages. We cannot do these things any more than we could go on permanently under a government in which the people had no intimate interest.

But, because adventure is subjective, it is not possible to say simply, "Go to, we will make business adventurous for people!"—and straightway do it. It is possible to provide tennis courts, picnics, pension plans, and the like, in that way—but not adventure. Nevertheless, adventure is always found to possess certain tangible characteristics which employers can foster if they choose. For example, it always involves some task the outcome of which is uncertain for the reason that it is not directed entirely by immutable laws, but depends in some degree on the amount of initiative and ability and common sense exercised by the individual. Again, there must be obstacles, and freedom of action within the limits of the undertaking.

An engineer famous for numerous achievements narrated to me some of the circumstances of his boyhood. When he was twelve years old he was already finding his way to notable adventures, even though at the time he was not aware that he wanted adventure. He lived in the little village of Ashland, Nebraska. Indians were near neighbors and railroad trains were somewhat of an event.

That would seem to be a favorable setting for adventure, of the kind that one reads about in boys' books. But the engineer as a boy did not find adventure while hunting Indians, or exploring the prairie, or floating a homemade raft down the lonely Platte. He did find it in a bit of iron and brass and boiling water. Out of the most inadequate materials he constructed an engine after his own design. And when he built a fire under the boiler, and the steam sought to escape, it had to pass through a piston valve that he had invented. Nowhere had he seen that kind of valve or seen it described. He believed, however, that it should be effective; and so it proved.

Later, when he had the opportunity

to examine locomotives carefully, the boy discovered that piston valves identical in principle with his had been invented by others many years before. But he had achieved the invention independently. That was an adventure more enthralling to him than any treasure search, or Indian hunt, or exploration of hidden caves. And his whole life has been a continuation of such adventurings, often into fields of science and invention never before explored. What he really discovered as a boy was how to be intensely interested in his work.

He was doubtless one of those destined to find adventure regardless of his circumstances. Perhaps more representative was the case of a young man possessing ordinary ability but inclined to be persistent in such adventurous ideas as he entertained. It was his misfortune to work for an employer who received such ideas with a limited welcome.

It was felt within the organization that the young man should conform to the company's customary ways of doing things, but he could not conform readily. He was admittedly rash where his ideas were concerned, and his rashness was checked only by the constant watchfulness of his employer, not by his own free will. Literally, he was not trusted.

Finding that he could conform no longer, he left for a new position under a different type of man. Not only was the new employer an adventurer in the best sense, but also he welcomed men with adventurous ideas.

The young man thought of a scheme, and he went to his employer with it. The latter neither praised nor discouraged it.

"Why," he asked, "don't you try it?"

Instantly the young man became cautious, with the caution characteristic of adventure. Allowed freedom of action and responsibility such as he had not known before, he felt instantly that it was necessary to measure the scheme afresh to see whether his enthusiasm was justifiable and he ought to go ahead.

The first of these two employers, it is necessary to say, has a limited business. It grows only within the bounds of his own narrow adventurings. The second employer's business is younger, but already many times larger. It grows not only on his own adventurings, but also on those of a group of men who are accorded the chance and given the encouragement to develop all that is in them. One employer represses the adventurous spirit while the other nurtures it. The first could easily gain the advantages that the second gains, but he does not trouble himself to do so.

By such methods as the second employer uses, the spirit of adventure can be quickened throughout business. People can be led to discover new sources of interest in their work. Every great teacher makes his subject so attractive that his pupils wish to study. He does not teach them, in the literal sense, so much as inspire them with a desire to learn. So with business men: they can scarcely hope to create business adventures for workers on a large scale, but they can inspire the workers and make it possible for them to find their own adventures. It must always be remembered that adventure does not follow any formula. Whether in the forest, the laboratory, the factory, or the office, no two men find adventure in exactly the same way. Part of a man's zest in adventure lies in choosing his own route and forging into the unknown without a guide.

I am acquainted with a man who happens to find his chief adventure in so simple a task as devising new kinds

of forms for record-keeping. I know a department manager who draws charts for his own information and pleasure, showing in various ways the expenses and income of his department each month; and it is his adventure to try to improve his record. I know a third man who finds the daily reports from his order department more adventurous than any other one thing in his life. Change which implies progress, the acquisition of new information or fresh skill, growth, development—these belong to the spirit of adventure. But stagnation, deadening routine, and the uncomfortable feeling that there is nothing new to look forward to, kill the possibility of interest and adventure in work, and all the wages in the world cannot alter the fact.

For the very reason that there is no formula for adventure, it is not possible to catalogue all the ways in which the spirit of adventure may be introduced into business. If there is one way, there are a thousand. The ways cannot be standardized. Standardization would be ruinous. The whole purpose is to permit and to encourage individual development. But it is possible to discover some of the practices that keep many people from finding their work interesting and adventurous.

The giving of responsibility implies that a man is allowed freedom of action within the scope of his work. He is supposed to use his judgment and not to rely entirely on what others tell him to do. Mental agility is considered more important than rules. All of this makes for interest in the work, but there are an astonishing number of people who are not allowed any discretion even in minor matters affecting their jobs, but are expected to do what they are told, in the way they are told to do it, without questioning the reasons and without being held responsible for the results. The implication is that their brains are not desired or needed, and business thereby loses in the aggregate a tremendous amount of mental energy.

"Passing the buck" is a familiar phrase and practice in business. It arises from this failure to give responsibility, as well as from the fact that few employees are encouraged to take sufficient interest in their work to assume responsibility on their own account. It is stimulated by other factors in modern business. Among these may be included some types of group production, and excessively rigid inspection.

It may seem extraordinary that rigid inspection could be considered harmful. But imagine for a minute how it would be if every individual could be trusted as his own inspector. A shop, a store, or an office where workers felt such interest in their jobs that the workmanship was beyond the need of question, would be nearly ideal.

The reason inspectors are required is not the natural carelessness of people, because people are seldom careless about the things in which they are interested. Inspectors are needed because *men do not care*. They do not find their work sufficiently interesting to cause them to put into it the last ounce of pains. They feel no personal responsibility. Somebody else will catch the errors, or they may escape notice altogether; either way makes little difference. So they feel. But men who find adventure in their work do not feel that way.

Group production sometimes helps men to find interest in their work, and sometimes it hinders them. What the individual does merges with what the group does. The group gets praised or blamed. If slackers slight their tasks, the results may not appear in the product or honest workers may be discredited. But give the group as a whole

definite responsibilities and definite incentives, thereby restoring interest and the spirit akin to adventure, and the slacker is discovered and turned out by his fellow workers.

Thousands also lose interest in business because they do not have the chance to change from one kind of work to another. The repetition of physical motions and mental processes, which is valuable up to a certain point, if continued for year after year finally deadens initiative and enthusiasm, and the man becomes little else but a machine at his work, incapable of finding in it the subjective experience of adventure. The inertia that allows this to happen is a dead weight on business. It is not only the man's misfortune, but also the misfortune of business, if an individual shows an early aptitude for certain tasks and is kept at them without change for tedious months and years. A business in modern times is a complex organization, and like any organization it grows as a whole only as it grows in its various parts. If some of the parts are permitted to atrophy, the whole is less alive than it should be. If any individual fails to translate his past experience into new channels of development, the business loses just that much of what it might easily have.

Some workers, of course, do not like to change around. Having learned one job, they prefer to keep on with it. That does not mean that they are hopeless for adventure, but that they may find adventure in their work in another way.

It is argued with some appearance of logic that it is costly to be taking men constantly from one kind of work and putting them at another, and admittedly it is difficult to furnish exact proof to the contrary. The immediate results are necessarily intangible. Next month's costs may run higher; but next year's are likely to be lower. The release of brain power, even on little jobs, sometimes accomplishes astonishing results.

A rather simple method of increasing interest in the work is to hang up the record of previous performance and to stimulate the desire to beat it. Again, there are ways to give workers a proprietary interest. Employers rarely lack the zest of adventure for they are nearly always proprietors, and in a marked degree they can exercise freedom of action.

These are only a few of the directions in which the effort to restore the spirit of adventure may travel. It is essential that the work itself be made interesting, not that a substitute be provided. The fundamental objection to all varieties of paternalism, which most workers dislike without knowing exactly why, is found in the attitude that the work itself cannot be interesting and adventurous, and that therefore something else which is interesting must be supplied.

Tennis courts, dance floors, reading rooms, and picnics may be all very well in their way and place. But there is a fundamental difference between *a good place to work*, which may accurately describe a paternalistic plant, and a place where *the work is interesting*.

Men differ in brain capacity as well as in experience. What would appear interesting and adventurous to a truck pusher would not necessarily be interesting and adventurous for the factory superintendent or the office manager, nor even for the truck pusher a year hence. A child may find adventure in the mere act of walking three blocks from its home: not so, usually, the mother or father. It is a serious mistake, too, to assume that a monotonously repetitive task cannot be adventurous for a man constituted to enjoy some phase of it. Any task, if it

is within a man's range of interest, can somehow become adventurous for him.

Most people have had the experience of observing the enthusiasm of a young man upon first entering business. It comes to him as an adventure, something new, and he goes at it eagerly. But often he quickly begins to hate the business, the hours, the discipline, and the assigned tasks. He turns away from business for his adventure and finds it elsewhere, with the result that business employs the less active portion of his brain.

I know very well a man in his middle thirties to whom this has happened. Only a little of his work is routine: that is, monotonously repetitive. He could not endure it at all if it were that. The work, essentially, is creative, and another man in his place would probably make it the most important position in his branch of the business. He could make it so himself if he were less ready to accept conditions that others happen to be only too willing to impose, or if the employer exercised the creative imagination needed to help him intensify his interest in that job.

This man does not find adventure in his work. He thinks it dull, and as quickly as he can he runs away to some book on bridge whist or to a game. There are elements in his job that might make it more adventurous than any game of bridge whist ever played. But he does not see them.

When a thing like this happens, something passes out of business that business needs to keep. Creative human energy is its profoundest asset, worth more than all tangible properties. There have been great businesses that it would seem nothing could kill, yet they have atrophied when a leader who understood and exercised and encouraged this creative energy, was supplanted by another who failed to do the same. Great businesses are not built and kept alive by practices that harden into inflexible rules of procedure, nor by the unaided thinking of single individuals, but by the independent and co-ordinated thinking of many. The head of a business is the leader in the thought of his organization, not the sole fount from which all of its wisdom flows.

If it is desirable for life to partake of the spirit of adventure, it is assuredly desirable for business to encourage it also. Most men spend the greater part of their waking hours at business, or on their way to or from it. And most men actively hate it, or else regard it with mild distaste, because it does not interest them. They get to feel about business as many of them once felt about school, and for the same reasons.

It is becoming one of the great tasks of management to restore the zest of adventure to business. It can be done. It has been done. And to do it is perhaps the greatest adventure of all!

COST OF LIVING AND WAGES

BY JOHN W. SCOVILLE *

WHEN the cost of living was increasing so rapidly during and following the Great War, employees demanded wage increases to compensate the decreased purchasing power of the dollar. Several concerns made wages depend automatically on index numbers of prices and the principle that wages should move in unison with living costs has been embodied in wage agreements entered into by printers and by railroad employees. We believe that an examination of the question will show that the linking together of wages and the cost of living is unsound.

Let us first examine the facts. We know the average weekly earnings of

TABLE I. INDEX NUMBERS OF WAGES AND THE COST OF LIVING

Date	Cost of Living in Mass.	Factory Earnings N. Y. State	Real Wages
July, 1914	102.1	102.1	100.0
Oct., 1914	104.1	99.8	95.9
Jan., 1915	102.9	101.3	98.4
Apr., 1915	101.0	102.1	101.1
July, 1915	101.7	103.1	101.4
Oct., 1915	103.2	108.3	104.9
Jan., 1916	105.7	110.2	104.3
Apr., 1916	108.2	115.2	106.5
July, 1916	109.9	114.9	104.6
Oct., 1916	103.6	121.7	107.1
Jan., 1917	119.6	124.4	104.0
Apr., 1917	125.3	126.2	100.7
July, 1917	129.3	131.6	101.8
Oct., 1917	137.1	141.1	102.9
Jan., 1918	144.6	136.8	94.6
Apr., 1918	145.9	156.7	107.4
July, 1918	155.1	169.2	109.1
Oct., 1918	164.2	181.9	110.8
Jan., 1919	167.5	187.5	111.9
Apr., 1919	167.0	180.0	107.8
July, 1919	171.5	188.1	109.7
Oct., 1919	179.9	198.7	110.5
Jan., 1920	192.0	215.9	112.5
Apr., 1920	196.3	226.4	115.3
July, 1920	202.6	232.0	114.5
Oct., 1920	194.9	235.5	120.8
Jan., 1921	179.5	224.8	125.2
Apr., 1921	164.5	213.3	129.6
June, 1921	159.4	209.3	131.3

* Statistician for the American Writing Paper Company, Holyoke, Mass.

about half a million factory workers in New York State. In the neighboring state of Massachusetts, we have monthly figures on the Cost of Living compiled by the Massachusetts Commission on the Necessaries of Life. These figures are based upon retail prices and they cover rent, food, clothing, and all groups of commodities entering into the cost of living. We can probably assume with little error that factory wages in Massachusetts have moved parallel to factory wages in New York State. In the preceding table, we show relative values of the cost of living, money wages, and real wages (amount of goods that can be bought with the money wages).

The cost of living reached its maximum in July, 1920; money earnings reached a maximum in October, 1920. But real wages or the purchasing power of the money wages reached a maximum in June, 1921, when workers *who were employed* could purchase 31 per cent more goods with their earnings than seven years before. The recession in living costs has been going on at a faster rate than the recession in money wages; this effects a rise in real wages or commodity wages.

The figures in the last column show that wages in factories advanced more rapidly than living costs and that the industrial workers benefited by the increase in prices; that in recent months wages have not declined so rapidly as retail prices. However, the real conditions are not so favorable for workers, as the figures in Table I might indicate, on account of unemployment.

Total pay-rolls have fallen much faster than hourly wage rates, because millions have been laid off. Hence the purchasing power of the entire industrial working class is now little, if any, above the level of six years ago.

Less complete information is available when we seek to study the relation between wages and the cost of living over long periods. The U. S. Labor Bureau has worked out index numbers for wages back to 1840; Dun's Index Numbers of wholesale commodity prices has been extended back to 1860. In the following table, we give these two sets of index numbers, with their quotient in the third column. This quotient shows roughly changes in real or commodity wages.

In interpreting these figures we must bear in mind that retail prices fluctuate

Table II. Index Numbers Showing Changes in Real or Commodity Wages

Date	Money Wages per Hour	Wholesale Commodity Prices	Real Wages
1860	39	39.0	100
1870	67	53.0	126
1875	67	44.1	152
1880	60	39.3	153
1885	64	30.9	207
1890	69	28.9	239
1895	68	25.9	263
1900	73	30.5	239
1905	82	32.1	255
1910	93	38.1	245
1915	103	39.8	259
1920	234	84.3	278

less than wholesale, that hours of labor have been reduced, and that in 1860 many things were obtained almost free, such as garden truck, which now are mainly purchased. Thus the increase in real wages has been less than the figures indicate. Nevertheless, we are safe in assuming that real wages advanced rapidly from 1860 to 1895.

This advance was caused principally by the fall in commodity prices with no corresponding decline in money wages. Since 1895, real wages have been nearly constant, although there was some advance from 1910 to 1920.

We may draw from these studies the following conclusions:

1. Money wages show a tendency to advance faster than the cost of living, both in recent years and the past six decades.

2. Real wages show an upward trend, although this upward movement has been much slower since 1895.

3. The purchasing power of an hour of work has been increased from two to three times since 1860.

From 1870 to 1920, the per capita consumption of coffee in the United States increased from 5.79 to 13.49 pounds and in the same period the per capita consumption of sugar increased from 32.7 to 64.8 pounds. The increased use of telephones, automobiles, and electric appliances and of such commodities as sugar, coffee, and silk confirm our conclusion that the standard of living has been rising, and that it is not true in this country that the poor are growing poorer.

Further proof that the standard of living in the United States has been rising is obtained from index numbers of physical production in the United States, developed by Prof. E. E. Day, of Harvard University. Professor Day has made exhaustive studies, and from his production tables, we have computed the following index numbers of annual production in the United States per inhabitant.

These figures of Table III show that agricultural output per person keeps nearly constant, but the output of mines and factories per inhabitant has increased in the past twenty years from 50 to 75 per cent. Of course it would be possible that this extra output of mines and factories goes only to the rich. But common observation shows that much of this increase in manufactures is diffused among all the people. For instance, in some states, there is one automobile for every eight persons, or one automobile for every other family. It will also be noted that the increase in the output of mines

Table III. Index Numbers of Per Capita Production

Year	Agriculture	Mining	Manufacture
1899	100.0	100.0	100.0
1901	86.0	110.4	108.3
1903	97.1	124.9	116.1
1905	104.5	143.8	128.6
1907	96.3	159.4	133.9
1909	97.6	156.5	135.0
1911	93.4	155.1	126.3
1913	94.2	175.3	144.4
1915	105.9	170.9	140.6
1917	98.9	203.1	157.7
1919	98.5	163.5	139.8

and factories was much greater in the decade from 1899 to 1909 than in the decade from 1909 to 1919. This supports the view already expressed, that while production per capita in the United States is increasing, the rate of increase is declining.

The principal causes of the increase in material well-being in the United States are:

1. The progress of invention and scientific discovery.
2. The substitution of machine labor for hand labor.
3. The development of transportation facilities.
4. The opening up of the fertile lands of the Middle West.
5. The accumulation of wealth.

There are sinister statistical signs that the annual per capita production of wealth in the United States may soon become stationary or may even decline. Among causes that will lower the standard of living in the United States, are:

1. The growth of population.
2. The exhaustion of natural resources.
3. The shortening of hours of labor.
4. Deterioration of the human stock from urban life and from adverse selection.
5. Warfare between nations or between industrial classes.

We believe that the factors which have made our great prosperity are of temporary effect, but that the causes which will operate to lower the standard of living are deep-seated, permanent, and of increasing effect. Having reviewed some of the major facts in regard to the cost of living and wages, we will now state our reasons for believing that it is unsound practice to base wages upon the cost of living.

1. It is impossible. Had wages been dependent upon the cost of living and had real wages therefore been constant from 1860 on, the workers would not have shared the benefits of our increased industrial efficiency. Working people would not have endured this oppression. If in the future, per capita production falls, neither trade unions nor legislation can keep per capita consumption from falling.

2. In times of emergency, as in war, it is desirable that domestic consumption be curtailed. Constant real wages would relieve workers from any necessity of curtailing consumption.

3. In times of large crops and big production working people should share in the prosperity, matching larger production with larger consumption. Constant real wages brought about by yoking together wages and the cost of living, would tend to prevent this increased consumption.

4. In basing wages upon the cost of living, we assume that in the base year, wages were correct in amount and correctly distributed between different classes of workers. This is too great an assumption.

5. If wages are held artificially above their natural level, unemployment develops. Thus linking wages and the cost of living would not protect the workers.

6. When real wages fall, forces are brought into play that check the fall. Thus if population tends to increase too rapidly, the fall in real wages will operate to check the growth in population. Constant real wages would eliminate these social checks.

The fallacy embodied in the plan of making wages dependent on the cost of living is aptly expressed in the phrase: "The world owes me a living." It would modify the old slogan by substituting this one: "The world owes me a fixed amount of food and clothes."

Now the world doesn't owe any such debt and if we press such claims, we find the world is very poor pay. We cannot base our plans upon humanitarian conceptions of what ought to be. We cannot make wage payments depend upon estimated family budgets. For after we had prepared budgets we would find, like Mother Hubbard, that the "cupboard was bare" or at least not sufficiently stocked with bones.

BURDEN IMPOSED BY THE INCOME TAX ON CORPORATIONS AND PARTNERSHIPS

BY H. H. BAILY*

THE Revenue Act of 1918 furnishes one of the chief sources of income for the United States Government. It provides for the taxation of the incomes of individuals by a normal tax and a graduated surtax. It also provides for the taxation of the profits of corporations by a normal tax and an excess profits tax, the latter being based on the relationship between the invested capital and the profit. Thus, the tax levy on a corporation is made in an entirely different manner from that on an individual.

The law does not recognize the partnership for the purpose of taxation. Any profit of the partnership is considered as a profit belonging to the individual owners and as such must be reported by the individual regardless as to whether it is distributed or not. However, the partnership must make a return setting forth the profit of the partnership and the division of profits. The purpose of the return is to enable the tax commissioner to check the profit of the partnership with the income as reported by the individual. It is in the nature of a supplementary return. This makes the profit of the partnership subject to the tax as it is levied on the income of the individual partners.

Since we have one method of levying the income tax on corporations and another method of levying the income tax on partnerships, will the amount of the tax be affected by the form of business organization? For instance, if four men operated a business as a corporation will the tax to be paid by them be the same as it would be if they were to operate the business as a partnership?

A large number of cases have been studied in order to get a definite idea of the burden laid by the tax on the individual who owns an interest in a partnership. Calculations have been made to show the per cent of the net profits the individual would pay as an income tax provided:

1. He owns either 10, 25, 33⅓, 50, 66⅔, 75, 90 or 98 per cent interest in the profits.
2. The individual has an income from other sources amounting to $2,000, $5,000, $10,000, $15,000, $25,000, $35,000, $50,000, $75,000, or $100,000.
3. The total taxable profit of the partnership was $5,000, $10,000, $15,000, $20,000, $25,000, $35,000, $50,000, $75,000, or $100,000.
4. The personal exemption of the individual is $2,000.

The calculations were made for each combination of share owned, income of the individual from other sources, and profit of the partnership.

The method of determining the tax paid by an individual on his share of the profits of the partnership, was to find the tax the individual would pay if there were no earnings from the partnership, and then to find the tax he would pay if the partnership makes a given profit. The difference between the amounts of the taxes thus found can properly be considered as the tax paid on the profits of the partnership. This difference, divided by the individual's share of the profits, gives the per cent of the profits that he must pay to the government as a tax.

In this connection the effect of the

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ownership of various shares in the partnership must be considered. One man secures 10 per cent and another secures 90 per cent of the profits of a partnership. How will the income tax affect these men? In this case there are three things to be considered: The profits of the partnership, the share owned by each individual, and the income received by the individual from other sources. The two important things affecting the tax are: (1) What is the income received by the individual from other sources? and (2) is the income secured from this particular partnership large or small?

The following table shows the per cent of the taxable income received from a given partnership that will be taken by the income tax. In this table it is considered that in every case the individual has an income of $15,000 from other sources. The calculations made show the results for the man who is entitled to either 10, 25, 33⅓, 50, 66⅔, 75, 90, or 98 per cent of the taxable income of the partnership which the individual owns. The column at the left-hand side gives the various amounts of taxable profits of the partnership for which calculations have been made. The other columns show the per cent of the share of the profits which an individual with other income of $15,000 would pay as an income tax. The last column at the right shows the average increase for each additional per cent of profits claimed by the individual.

In studying the table it is interesting to notice that for any given income of the partnership, the per cent of income paid as a tax by individuals owning different per cents of the partnership, will vary in proportion to the share owned. This variation becomes more exact as the profits of the partnership increase, provided that the total income of the individual is not over $100,000, at which point it becomes affected by the change in the rate of the surtax. For instance a partnership has a taxable income of $100,000. The individual who receives 10 per cent of the profit will pay 16.50 per cent of this income to the government as a tax. The individual who receives

PER CENT OF PARTNERSHIP INCOME TAKEN BY THE TAX

Other Income of the Individual—$15,000

Share owned by the individual

Profit of the company	10	25	33⅓	50	66⅔	75	90	98	Average increase for each additional per cent owned
	Per cent taken								
$5,000	14.	14.	14.40	14.60	14.80	14.93	15.11	15.18	.01 plus
10,000	14.	14.60	14.80	15.20	15.65	15.85	16.22	16.45	.02½(About)
15,000	14.33	14.93	15.20	15.86	16.50	16.80	17.37	17.67	.04 (About)
20,000	14.50	15.20	15.65	16.50	17.35	17.73	18.50	18.89	.04⅔—.05¼
25,000	14.60	15.56	16.08	17.08	18.16	18.68	19.58	20.12	.06—.06½
35,000	14.86	16.17	16.91	18.37	19.38	20.56	21.87	22.55	.08⅔
50,000	15.20	17.08	18.16	20.24	22.32	23.37	25.24	26.24	.12½
75,000	15.86	18.68	20.24	23.37	26.50	28.06	30.87	32.37	.18⅘
100,000	16.50	20.24	22.32	26.50	30.67	32.75	36.63	38.53	.25

25 per cent of the profit will pay 20.24 per cent of this income as a tax. The difference between the 10 per cent owned and the 25 per cent owned or 15 per cent results in a difference of 3.74 per cent in the tax. This makes an increase of .25 per cent in the tax for every increase of 1 per cent in the ownership. A study of the figures shows that this same rate of increase, .25 per cent for each 1 per cent of additional ownership, holds good until the individual's total income from all sources is about $100,000. Again, if the partnership has a taxable profit of $25,000 the increased tax for each 1 per cent of additional ownership is from .06 per cent to .65 per cent. It should also be noticed that the starting point for this table is 14 per cent, this per cent being made up of a normal tax of 8 per cent and a surtax of 6 per cent.

The figures in the table given show the tax when the income from other sources is $15,000. If the income from other sources is changed to $25,000 or $50,000 the average increase for each additional 1 per cent owned remains the same. Two exceptions should be made to this statement: (1) It does not hold true when the individual has a personal exemption of $2,000 and the other income is less than $6,000, and (2) it will not hold true if the total income is over $100,000.

II

While we speak of the excess profits tax and the corporation income tax as being taxes on the profits of the corporation, these taxes are really borne by the individual stockholders. The profits remaining for distribution are decreased. The tax takes profits which could otherwise be distributed as dividends or if left in the corporation would enhance the value of each share of stock. Therefore each stockholder can claim that his share of the tax bears the same proportion to the total tax as the number of shares of stock he owns bears to the total number of shares of the outstanding stock. This means that when we consider the burden that the income tax places on the individual stockholder of a corporation we must consider not only the surtax which he pays on dividends but also the corporation income and excess profits taxes. (It must be remembered that dividends are not subject to the normal tax.)

So far as corporations are concerned this discussion deals only with those having an invested capital of $10,000, $15,000, $20,000, $25,000, $35,000, $50,000, $75,000, $100,000, $150,000, and $200,000. For each different amount of invested capital calculations have been made to find the tax the corporation would pay on an income of $5,000, $10,000, $15,000, $20,000, $25,000, $35,000, $50,000, $75,000, and $100,000.

The following points must be considered when discussing the above problem:

(a) The invested capital of the corporation;

(b) The taxable profit of the corporation;

(c) The dividends declared by the corporation from the profit remaining after the corporation income and excess profits taxes are paid;

(d) The proportion which the shares owned by the individual bears to the entire capital stock outstanding—this will be referred to as "share owned";

(e) The amount of income received by the individual from other sources;

(f) The personal exemption of the stockholder.

Here again when considering the portion of the dividends that is taken by the tax one should find the amount of tax that the individual pays on his

entire income. From this amount deduct the tax he would pay if no dividends are declared by the corporation in question. This gives the amount of tax the individual pays as a result of the dividends. The tax paid by the individual on dividends added to his share of the corporation income and excess profits taxes paid by the corporation will give the total tax that he may claim as levied against his portion of the profit of the corporation. For purpose of comparison with the partner it was considered that the stockholder owned the same share of the corporation, secured the same amount of income from other sources, and was entitled to the same personal exemption as was given for the partner.

A careful study of the results shows the following:

1. Changes caused by the invested capital of the corporation.
   (a) As the invested capital increases the per cent of the profits taken by the tax decreases. This is principally caused by the increase in the excess profits credit. The following illustrates this point. For the cases studied the tax on a corporation with an invested capital of either $10,000, $15,000, or $20,000 is the same as the tax on a corporation with an invested capital of either $25,000 or $35,000 except when the profit is $5,000; the tax is increased as the invested capital is decreased. Also if the invested capital is $50,000 the only change from the results when the invested capital is $25,000 or $35,000 is when the profit is $10,000; the tax being small for the larger corporation.
   (b) The greatest change is found when the taxable profit is between $5,000 and $50,000. The excess profits credit being greater for the large corporation than for the small corporation there is not the same rapid increase in the tax when the corporation has but a small income.
2. Changes caused by the dividends declared by the corporation from the profit remaining after the corporation income and excess profits taxes are paid.
   (a) If no dividend is declared the corporation income and excess profits taxes constitute the entire tax on this income. The profit remains in the possession of the corporation and the individual is not required to pay a surtax. Consequently in this case the rate of the tax levied against the stockholders is the same regardless of both the share owned and their income derived from other sources.
   (b) A dividend of 25 per cent of the profits will have the effect of increasing the individual's share of the tax already paid by the corporation by about 2 per cent for every $25,000 income the individual receives from other sources.
   (c) A dividend of 100 per cent of the profits will have the effect of increasing the individual's share of the tax already paid by the corporation by about 8 per cent for every $25,000 income the individual has from other sources.
3. Changes caused by difference in shares owned.
   (a) If no dividend is declared the tax paid by the corporation falls with proportionate weight on all stockholders regardless of both the amount of stock owned and their income from other sources. (See (a) above for reason.)
   (b) If the dividend is 25 per cent of the profits remaining after the corporation income and excess profits taxes are paid:
   (1) If the corporation has an invested capital of from $10,000 to $35,000 the per cent of the individual's share of the income of the corporation that is taken by the tax will be practically the same whether he owns a small share or a large share in the corporation. For the man who owns 10 per cent of the stock and the man who owns 90 per cent of the stock the variation is from 0 to 6/10 of 1 per

cent (.6 per cent). This variation is caused by the profit of the corporation. If the profit of the corporation is $5,000 the variation will run from 0 to .02 per cent; if the profit is $25,000 the variation will run about .18 per cent; if the profit is $100,000 the variation will run from .45 to .6 per cent.

(2) If the corporation has an invested capital of $100,000 the variation is just about the same as is given above, the difference being usually less than 1/10 of 1 per cent.

(c) If the dividend is 100 per cent of the profits remaining after the corporation income and excess profits taxes are deducted:

(1) If the corporation has an invested capital of from $10,000 to $35,000 the variation in the per cent of the income taken by the tax for the man who owns 10 per cent and the man who owns 90 per cent is from 1 per cent to 7½ per cent. The variation is caused by the profit of the corporation and not by the other income of the individual. If the profit of the corporation is $5,000 the variation is from 1 per cent to 1 3/10 per cent; if the profit is $25,000 the variation is about 2¾ per cent; if the profit is $100,000 the variation is about 7½ per cent.

(2) If the corporation has an invested capital of $100,000 the variation is again about the same as is given under (1), although it may differ at times by about ⅓ of 1 per cent.

The variations given under 3, hold true regardless of whether the income of the stockholders from other sources is $15,000 or $75,000. Three exceptions should be given for these variations. First, before these variations hold true the individual's income from other sources must be subject to both the normal tax of 8 per cent and the surtax. Second, if the income of each stockholder from other sources amounts to $100,000 and the total income of each stockholder does not exceed $150,000 the tax will take the same per cent of the income of the stockholders regardless as to whether they own 10 per cent, 50 per cent or 98 per cent of the stock of the corporation. Third, if the other income is less than $100,000 but the total income is over $100,000 the amount of the variation between the burden placed by the taxes on the different stockholders is decreased, the amount of the decrease depending on how near the other income is to $100,000 and the share of the dividend going to each stockholder.

III

If the income of an individual from other sources is $2,000 or less, it is better for him to conduct his business in the form of a single proprietorship, or as a partnership, than as a corporation. The only exception to this is in the case of the individual who owns practically all the stock of the corporation, where the invested capital of the corporation amounts to over $100,000, and the taxable profits are about $10,000. Even in this case it would be necessary to increase the invested capital very rapidly or an increase in the profits will give the advantage to the partnership form of organization. Again, if a man has an income of $25,000 from other sources, and his share of the profits of the business is 10 per cent it would be best for him, if the business were operated as a partnership, if the income of the business approaches $15,000. This is not true for an invested capital of $150,000 or more unless the profits amount to some $40,000. The above holds true when no dividends are paid. If dividends are paid the advantages of operation as a partnership are still more evident.

On the other hand, if the individual has an income of $50,000 from other sources he should always operate the business as a corporation if he owns more than a half interest in it. Even if he owns only 10 per cent of the business it would be best for him if the business were operated as a corporation if the income of the business is not over $30,000. Again, if he has an income of $25,000 from other sources he should operate the business as a corporation if he owns an interest of 98 per cent and the profit of the business is not over $15,000. It is worth noticing that as the invested capital of the business increases the corporate form of organization becomes more and more advantageous, while the payment of dividends by the corporation makes the corporate form of organization less desirable.

It is difficult to give, even approximately, any general statement concerning the comparative advantages of corporate and partnership organizations. As has been seen there are several conditions affecting the results any one of which may be sufficient to throw the advantage to one organization as against the other. However, the following points give the general tendency of the effect of the more important items which must be taken into account. The results are stated for the various conditions which were considered.

1. The income of the individual from other sources: As the income of the individual from other sources increases the corporate organization becomes more advantageous provided the payment of dividends does not affect the result the other way. If the individual has no income from other sources he should always operate as a partnership regardless of the share owned. The same is practically always true if the other income is $2,000. When the other income is $5,000, $10,000, $15,000, or $25,000 the result will in each case be largely determined by the capital invested in the business, the income of the business, the share owned, and the dividends paid. If the other income is $35,000 the advantage on a small profit is with the corporation; but as the profit increases, the advantage may be thrown either way according to the other influences. If the other income is $50,000 the corporate organization is more advantageous. If the other income is $75,000 or more the advantage is always with the corporate form of organization unless it is changed as the result of the payment of dividends.

2. The effect of the invested capital on the business: As the amount of capital invested in the business is increased it causes a reduction in the tax paid by the corporation, but will have no effect on the tax paid by a partner on his share of the profit of a partnership. An increase in the invested capital of a corporation from $10,000 to $20,000 or even to $35,000 will not affect the tax on a profit of $10,000 or more. It does, however, have the effect of reducing the tax on profit of $5,000. The lowest possible tax rate on a corporation profit of $5,000 is 6 per cent, provided the conditions studied are assumed. The invested capital of a corporation must be increased to over $71,428.67 before there will be any effect on the tax rate if the profit of the business is over $20,000. As the invested capital increases, the relief is felt on the small profits and the tendency is to make the increase in the tax rate more gradual. This is caused by the increase in the excess profits credit which in turn results in a smaller excess profits tax.

3. The effect of the taxable profit of the business: As the taxable profit increases the effect of the increase is to cause a larger per cent of the profit to be paid as an income tax. If an individual is entitled to but a small share of the profits of a partnership an increase in the profits may cause but a small increase in the tax on his income. He must obtain a good share of the profits from the partnership under consideration before an increase in the profits of the partnership causes a decided increase in his income tax. If the invested capital in a corporation is small there is a rapid increase in the tax on the profits until they reach some $50,000,

but after this the increase is moderate. If the invested capital of the corporation is \$150,000 or \$200,000 the increase in the tax on the first \$15,000 or \$20,000 of the profit is small but after this point is reached the increase is fairly regular on a profit up to \$100,000.

4. The effect of the share of the business owned by the individual: (1) In a partnership an increase in the share owned causes an increase in the tax on a partner. The rate of the increase is fairly regular until the total income of the partner is over \$100,000. (2) In a corporation the difference in the number of shares owned does not affect the tax on the individual if dividends are not declared. On dividends the individual is subject to the surtax when his income from other sources is \$5,000 or on that part of the income from the dividends which makes a total income of over \$5,000. This causes an increase in his tax. The larger the share owned the sooner will the corporate organization become the more desirable if no dividends are paid.

5. The effect of dividends declared by the corporation: If 25 per cent of the profits remaining after the tax is paid are declared as dividends the effect is to increase the taxes paid by the individual (the result of the surtax on the dividends) and will thus make the partnership more desirable than the corporation. If all the net profits are declared as dividends the effect is to increase the tax on the individual to a point where it is better for him to operate the business as a partnership in practically every case. The only exceptions to this are when the taxable profit is \$5,000 on an invested capital of \$25,000 or \$35,000; and when the profit is less than \$20,000 on an invested capital of \$100,000.

To restate the above exceptions more definitely:

1. If the invested capital of a corporation is less than \$35,000 and all the earnings remaining after the corporation income and excess profits taxes are paid are declared as dividends it would always be to the interest of all the stockholders to operate as a partnership when the taxable profit is \$10,000 or more.

2. If the invested capital is \$100,000 and the other conditions remain as given above it would always be to the interest of all of the stockholders to operate as a partnership when the taxable profit is \$20,000 or more. Also, if the taxable profit is \$15,000, for all the stockholders who have an income from other sources of \$75,000 or less it will be to their interest to operate as a partnership.

Anyone who studies the problem will be impressed by the inequalities in the levying of the tax, caused by the different methods of assessing the income of a single proprietorship or partnership on the one hand and a corporation on the other. For example, let us consider two men A and B. Each has an income of \$2,000 from other sources besides the company in question and each has a personal exemption of \$2,000. A secures 10 per cent of the profits of a partnership while B owns 10 per cent of the stock of a corporation, both companies having a taxable profit of \$25,000. A will pay 4 per cent of his share of the income of the partnership to the government as an income tax. If the invested capital of the corporation in which B is interested is less than \$71,428.67 the income tax will take 28.64 per cent of his share of the income of the company. Thus the tax on B is over seven times as heavy as that on A. In this case the tax on B's share of the profit of the corporation comes as a result of the Corporation Income and Excess Profits Taxes. If all the profits are distributed as dividends, B's share of the dividend will not be sufficient to require him to pay a surtax and as a result the tax on B is the same whether dividends are paid or not.

IV

Let us vary the example by assuming that each owns 98 per cent of the company instead of 10 per cent. A will pay 13 per cent of the income of the

partnership to the government while from B the government will take 28.64 per cent of his share of the profits even though no dividends have been declared. If all the net earnings remaining after the payment of the tax are declared as dividends the tax on B's share of the profits will be a total of 31.37 per cent of his share of the earnings. Thus the tax on B is over two times as much as it is on A. In both of these cases the advantage is with the partnership form of organization.

Let us consider another case. X and Y have each an income from sundry sources amounting to $100,000 and each is entitled to a personal exemption of $2,000. X has a 10 per cent interest in a partnership and Y owns 10 per cent of the stock of a corporation with an invested capital of $25,000 or more. In each case the company has a taxable profit of $5,000. X will pay 60 per cent of his share of the profit of the partnership to the government as an income tax. If no dividends are declared by the corporation, Y can only claim that 6 per cent of his share of the profit of the corporation is taken by the tax. In this case the tax on the owner of the partnership is ten times as heavy as the tax on the owner of the corporation.

If we vary this last case and assume that the individuals each own 98 per cent of the company, and if no dividends are declared by the corporation the results will be the same. If, however, in the last case the corporation declares as dividends all of its net earnings remaining after the taxes are paid, Y will be able to claim that 54.88 per cent of his share of the profits go to the government as taxes whether he owns 10 per cent or 98 per cent of the stock of the company. This brings their taxes within about 5 per cent of each other but the advantage still rests with the corporate form of organization.

These illustrations based upon the same conditions, only the form of the business organization being different, show in one case that the tax borne by the stockholder of the corporation is more than seven times that which is borne by the owners of a partnership. In another case the tax borne by the owner of a partnership is ten times that which is borne by the stockholder of a corporation. While the cases cited show a wide range of variation, yet cases showing greater variations could be selected. It would also be possible to state cases where the result would be practically the same. However, the great majority of cases have a variation of from 10 to 15 or 20 per cent.

It should also be remembered that the tax on a single proprietorship is levied in the same way as a tax on a partnership. In the case of a single proprietorship the entire tax is borne by the one owner, and this means that his tax will be a little larger than the tax on the individual who is entitled to 98 per cent of the profits of a partnership. Thus the same inequality that has been found to exist between the taxes on a partnership and a corporation will also exist between a single proprietorship and a corporation.

In this article for *Administration* no attempt has been made to call attention to the different advantages which go with the corporate form of organization, or to indicate the effect of the Revenue Act on the financial policy of corporations.

INTERNATIONAL DEALINGS IN SECURITIES

BY THOMAS YORK*

THE late war has aroused widespread interest in foreign exchange, especially in the phase of it having to do with the financing of export and import shipments. To satisfy this interest much has been written and spoken about the subject. Practically every feature connected with international commerce has been dwelt upon extensively either in books, periodicals, or newspapers.

There has also been a great quickening of interest in foreign securities, due to the tremendous volume in which they have been both floated and imported into the country in the past several years. Nevertheless, virtually next to nothing has been written concerning the principles which control the international distribution of securities. This article undertakes to describe these principles in considerable detail, particularly with reference to the work of the international arbitrageur. The subject is especially timely at the moment in view of the steps the New York Stock Exchange has taken to restore international arbitraging in stocks, which has been for the most part suspended since 1914.

In normal times securities are actively traded in between the financial centers of the leading countries of the world, and the dealings occasion a certain volume of transactions in foreign exchange. Stocks and bonds of old, outstanding issues are sold back and forth between international markets, and the accompanying settlements necessitate the remittance of funds from one to the other. Those regularly engaged in these dealings are principally large, private banking firms, with established connections in the foreign countries and possessing the requisite facilities for carrying on a regular foreign exchange business. The work is handled by their foreign departments which are in charge of individuals who are well informed on securities in general and on the issues dealt in internationally in particular, and who are also skilled foreign exchange traders.

These international security dealings are largely in the nature of arbitrage operations, in which quick advantage is taken of any existing inequalities in the prices quoted in the various markets for particular issues of stocks and bonds. The operators are in constant communication by cable with their foreign correspondents, who keep them informed on the course of prices abroad, and whenever a discrepancy occurs between the quotations of a particular stock or bond issue in the foreign and the local market, they simultaneously purchase the security in the cheaper market and sell it in the dearer, using the cable service to communicate with the foreign market. The difference between the prices at which they execute the two trades, less the incidental costs of the operation, is the amount of profit they clear.

This constant readiness of arbitrageurs to make the most of price variations between the several international markets has a tendency to eliminate the discrepancies and bring the quotations to a relation of equivalence or parity, in which the matter of expense, interest, loss and prevailing

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rate of exchange are taken into account. It has the effect of binding the markets together and causing them to move up and down sympathetically so far as the securities that enter into the international dealings are concerned. At the same time the arbitrageurs form the main channel by which stocks and bonds are distributed between the several countries. They satisfy the demand for securities in one country, which is reflected by the high prices prevailing there, by importing them from other countries where they are offered for sale and are cheap.

II

Prior to the war, Europe had huge investments in this country which were chiefly represented by heavy holdings of standard American railroad stocks and bonds. England was an especially large owner of these securities, her holdings having run into several billions of dollars. The natural outcome of this was an active market for American stocks and bonds on the London Stock Exchange, in the so-called Yankee department, and this in turn led to the carrying on of a large arbitrage business in the securities between the British center and New York.

The daily business session in the New York and London Stock Exchanges extends from 10 o'clock in the morning to 3 o'clock in the afternoon. But because of the difference in time between the two cities, which is a little less than five hours, trading in London lasts only a few minutes after the commencement of business in New York. In the pre-war days, however, British operators in American stocks would adjourn after the regular closing to the Curb, in a place adjoining the Stock Exchange, where they continued their arbitrage dealings with New York until the latter's closing, which was shortly after 8 o'clock by London time. In addition to operating in arbitrage New York traders would then often take advantage of lower interest rates in London by transferring to that city large lines of stock and carrying them in speculative accounts.

These conditions have been reversed as a result of the war. England is now a debtor of the United States, having lost her former position as a creditor, which for years had enabled her to invest heavy amounts in American securities. Her tremendous purchases of war munitions and other supplies in America during the period of hostilities forced her to relinquish the greater part of her American investments, which were sold back to this country. In addition, the British Government was obliged to contract a huge indebtedness here, which amounted at one time to more than five billion dollars. The outcome of this has been that trading in securities between New York and London has shrunk to comparatively small proportions. It was at a particularly low ebb, so far as private dealings were concerned, during the latter part of the war, when the prohibition which the British authorities had early in the conflict placed on international arbitraging and the importation of securities in general began to show its full effect. At the moment of writing, the importation of securities is permitted again but the ban on arbitraging is still in force.

In examining the system by which securities are dealt in internationally, it is best to revert to conditions as they obtained prior to August, 1914. The great markets between which arbitraging was done in those days were New York and London, and attention will be given mostly to trading as it was then conducted between those two

centers. Dealings were carried on by New York in a similar way, though on a much smaller scale, with Paris, Berlin, and Amsterdam.

III

The first point to be noted in connection with arbitraging between the New York and London Stock Exchanges is the way in which prices for American stocks and bonds are quoted in the London market. With comparatively few exceptions, the American securities held by British investors are dollar issues. The dividends on the stocks, and the interest and principal of the bonds are payable in this country, and the par values of both classes of securities are expressed in dollars. The securities are naturally dealt in in London for pounds sterling, and it is, therefore, necessary for the London Stock Exchange to quote their prices on a sterling basis. This is done by converting the dollar pars into sterling pars and making the market quotation refer to a certain percentage of the sterling pars.

There is a slightly complicating factor entering into this system of denoting the prices of American securities in London. This is the somewhat arbitrary manner in which the conversion of the par values is made. The exact sterling par of American stocks with an original par value of $100 is that number of dollars divided by the dollar equivalent of the pound, or $4.8665, which places the converted sterling par at approximately £20.55. There is, however, an obvious inconvenience in quoting the sterling prices as percentages of so uneven a figure as £20.55, and for that reason an even £20 is taken for the sterling par of American shares, the dollar par being reduced to the sterling par on the basis of $5, instead of $4.8665, to the pound sterling. Accordingly, when an American stock is quoted at 60 on the London Stock Exchange, the meaning is that its price expressed in sterling is 60 per cent of the sterling par of £20, or £12. From this it is seen that the sterling price of a stock is the market quotation divided by 5 $\left(\frac{60}{100}\times\frac{£20}{1}=\frac{£60}{5}\right)$.

Similarly, a bond with a par of $1,000 is assigned a sterling par of £200, instead of the exact equivalent of £205.5, and if its market price is 90, it is selling for 90 per cent of £200 or £180. The sterling price of a bond is, therefore, twice the market quotation $\left(\frac{90}{100}\times\frac{£200}{1}=2\times£90\right)$.

In comparing the prices prevailing in New York and in London for a particular stock for the purpose of determining the possibility of a profitable arbitrage, the arbitrageur computes the price in the one market which is equivalent to the current quotation in the other. If he finds that this parity price shows any divergence from the quoted price in the first market, he has the opportunity of making a profit by buying the stock in the cheaper market and selling it at the same time in the dearer market.

In figuring the parity price he, in the first place, has to take into account the prevailing rate of exchange, since the execution of the arbitrage transaction obliges him to make a transfer of funds between the two markets. If he buys the stock in London, he has to purchase sterling exchange in New York, or sell dollar exchange in London; and if he sells the stock in London, he is compelled to make the reverse exchange operation. Furthermore, since he pays for the stock in the one market when he receives it, and does not obtain payment in the other market until he has shipped and delivered

it there, he sustains a loss of interest while the stock is in transit, for which he must likewise make allowance in calculating the parity price. Additional factors entering into his computation of the parity are the costs he incurs in the two centers, including the expense of transferring the stock certificates from the one place to the other, which consists principally of the premium he pays for having the certificates insured during their voyage across.

While the parity price of a stock has been referred to as a single price, it is in reality a double quotation. Given the market price in London, there are two equivalents for it in New York, one in case the stock is bought in New York and sold in London, which may be called the New York export parity, and the other in case the stock is bought in London and sold in New York, which may be called the New York import parity. The reason for this double parity quotation will be clear later. Here it is sufficient to say that the twofold quotation is due to the interest loss and expenses incident to the arbitrage operation, since in figuring the New York parity of the London price when the stock is bought in New York and sold in London the arbitrageur must subtract the total costs from the London price, while in figuring the parity when the stock is bought in London and sold in New York, the arbitrageur must add the total costs to the London price.

IV

At this point it is necessary to consider briefly the differing systems by which transactions are settled on the stock exchanges of the two centers. In New York stocks and bonds are regularly dealt in for payment and delivery on the day following the execution of the trade. When an arbitrageur makes his purchase in New York, he receives the stock the next day, and is able to forward it to London by any mail sailing after that day; and when he makes his sale in New York he effects delivery the following day, and for this purpose he borrows the stock and places himself "short" of it until the arrival of the shares he has purchased in London.

A somewhat similar mode of settlement is practiced at present on the London Stock Exchange, where since the beginning of the war, only cash transactions have been permitted by the British Government. Before 1914, however, securities were regularly traded in there for the account, as it was expressed, or for payment and delivery on specific dates fixed by the Stock Exchange authorities, which were roughly a fortnight apart and came around the beginning and middle of each month. When, therefore, a New York arbitrageur purchased a stock in that market during the fortnightly period, his correspondent could not ship it to New York until after the next settlement; and when he made his sale in London, he did not make delivery until the following settlement time. If the stock he purchased in New York did not reach London in time for this settlement, he was nevertheless permitted to deliver it immediately upon its arrival for account of that settlement. This was a privilege which was accorded to sellers that brought securities in from abroad.

Computing the various stock and bond parities is necessarily a very essential part of an arbitrageur's work. In showing how these calculations are made, attention will first be given to the stock parities. When a New York arbitrageur buys a stock in New York and sells it in London, the only expense he may be assumed to incur in New

York is the cost of mailing the stock certificates to London. He usually pays no brokerage commission in New York, as he is generally a member of the Stock Exchange and can, therefore, execute the purchase himself. In London, however, he must pay his correspondent a brokerage fee for executing his sale. As soon as he forwards across the stock he purchases in New York, he reimburses himself by selling a demand draft against his London bank account, in which his correspondent will deposit the proceeds from the sale of his stock. The manner in which he figures the New York export parity, or the New York price that is equivalent to the London market quotation when he buys in New York and sells in London, can best be explained by citing a concrete example as follows:

Arbitrageur sells in London one share of an American stock of $100 par value at 91⅝, or for £91⅝ divided by 5	£18.325
He pays his London correspondent a brokerage commission of ⅛ % of the par value	.025
Net amount he realizes in London	£18.300
He sells £18.30 of demand exchange in New York at the rate of $4.85, netting	$88.755
Pays 1/10% of par value to ship to London the share he purchases in New York	.10
Amount he nets in New York from London sale after deducting all the expenses of the arbitrage in New York and London	$88.655

The arbitrageur has, therefore, $88.655 available for the purchase of one share of stock in New York for every share he sells in London. If he can buy a share for that amount, his arbitrage results in neither a profit nor a loss. Under the conditions assumed, therefore, the New York export parity of the London price of 91⅝ is $88.655. If the market price in New York happens to be below this amount, at $88.25 for example, the arbitrageur stands to make a profit of $.405 for every share he purchases in New York and sells in London.

The disparity of the prices, however, is usually shortlived, and for that reason the arbitrageur must act promptly. Other arbitrageurs are watching eagerly for the same opportunities to make a profit, and their buying of the stock in New York causes its price to advance there, while their selling of the stock in London causes its price to decline in that city. The two quotations thus draw together until they arrive at mutual parity, when arbitraging is no longer profitable.

The interest loss suffered by the arbitrageur in waiting for payment in London until the stock arrives from New York is accounted for by the lower demand rate at which he sells his exchange. He anticipates the receipt of payment in London by selling a draft when he mails the stock, but in doing so he loses the prevailing spread between the cable and demand rates of exchange, which represents interest at the London rate for the time it takes the draft and stock to get across. It is evident that given an unvarying price for an American stock in London and constant expenses in both centers, the New York export parity of the London market price moves up and down with the rate for demand exchange.

V

The foregoing illustration of the New York export parity of a stock can be represented in the form of an equation, as follows:

$$\$88.655 = \left(\frac{£91\frac{5}{8}}{5} - £.025\right) \times \$4.85 - \$.10$$

From this a general formula for calculating the New York export parity of the London market price of a stock may be derived. It is as follows:

$$\text{New York export parity} = \left(\frac{\text{London market quotation}}{5} - \text{London expenses}\right) \times \text{demand rate for sterling exchange} - \text{New York expenses.}$$

For other purposes than those of practical arbitraging, where it is only necessary to approximate the parity, it is customary to disregard the expenses incurred in the two cities, which affect the parity to a comparatively slight degree, and apply the formula in the following form.

$$\text{New York export parity} = \frac{\text{London market quotation} \times \text{demand rate for sterling exchange}}{5}$$

Instead of comparing the market prices of the stock in the two centers by figuring the New York export parity of the London price, the arbitrageur can reverse the process and compute the London import parity of the New York market price, or the price at which he must sell in London the stock he buys in New York in order to come out even on the transaction. This London import parity is obtained by taking the New York market price and retracing the steps indicated in the example above, in which the New York export parity of the London price was computed. It will be found that given the same expenses and the same rate for demand sterling exchange, the London import parity of a New York market price of \$88.655 is 91⅝. The process of determining this import parity is indicated in the following equation:

$$91\tfrac{5}{8} = \frac{5(\$88.655 + \$.10)}{\$4.85} + 5 \times £.025$$

According to this equation the formula for computing the London import parity of the New York market price of a stock is as follows:

$$\text{London import parity} = \frac{5(\text{New York market price} + \text{New York expenses})}{\text{demand rate for sterling exchange}} + 5 \times \text{London expenses.}$$

If the expenses in the two centers are left out of account, the formula assumes the following form:

$$\text{London import parity} = \frac{5 \times \text{New York market price}}{\text{demand rate for sterling exchange.}}$$

When the opposite arbitrage in a stock is undertaken, its purchase in London and sale in New York, the arbitrageur may take out and pay for the shipping insurance in London if he has made the arrangement with his representative there. Being now a seller of the stock in New York he has to pay the federal and state taxes levied on all stock transfers, which together amount to \$.04 a share. He remits for his London purchases by buying a spot cable transfer when the shares are delivered to his correspondent there. In New York he remains "short" of the stock he sells, borrowing it for the purpose of making delivery in the regular way on the day following. He turns over the money he realizes from his sale to the lender of the stock, and does not receive it back until the arrival of the shares he has purchased in London permits him to return the borrowed stock. Meanwhile his funds are locked up in the cable transfer he has purchased and he loses interest for the interval at the New York rate.

Assuming the market price of the

stock in London to be $91\frac{5}{8}$, the New York import equivalent of this quotation, or the price he must get to cover the purchase price in London and all expenses and losses he incurs in connection with the arbitrage, is computed as shown in the illustration below.

Cost of one share in London $\frac{£91\frac{5}{8}}{5}$ or		£18.325
Brokerage charge in London, $\frac{1}{8}\%$ of par	£.025	
Shipping cost, 1/10% of par	.02	
Total expenses in London		.045
Total London costs, or the amount of the cable remittance		£18.370
Cost of cable transfer at the rate of \$4.8550		\$89.1864
Interest loss on \$89.1864, at 6% for the 10 days the stock travels from London	\$.1486	
Transfer taxes in New York	.04	
Total expenses in New York		.1886
London purchase price and expenses converted into New York funds, plus New York costs		\$89.375

If the arbitrageur can sell the stock in New York for \$89.375, or $89\frac{3}{8}$, as the price would be expressed on the New York Stock Exchange, the sale will exactly offset the London purchase price and the incidental costs in both centers, including the interest loss. This price is, therefore, the New York import parity of the London market price of $91\frac{5}{8}$. If the stock should chance to be selling in New York above this parity, at $89\frac{5}{8}$ for example, the arbitrageur has the opportunity of making a profit of \$.25 for every share he purchases in London and sells in New York. The disparity leads to general buying in London and selling in New York on the part of arbitrageurs, and this tends to drive the price down in New York and raise the price in London. The quotations are thus drawn closer together and eventually a relationship of mutual equivalence is established between them.

The foregoing example may be given in the form of an equation, as follows:

$$\$89.375 = \left(\frac{£91\frac{5}{8}}{5} + £.025 + £.02\right) \times \$4.8550 + \$.1486 + \$.04.$$

From this it may be concluded that the New York import parity of the London price of an American stock is in general equal to the following:

$$\left(\frac{\text{London market price}}{5} + \text{London expenses}\right) \times \text{spot cable rate for sterling exchange} + \text{interest loss} + \text{New York expenses.}$$

If the incidental costs and interest loss are omitted, the formula is as follows:

$$\text{New York import parity} = \frac{\text{London market price} \times \text{spot cable rate for sterling exchange}}{5}$$

The counterpart of the New York import parity is the London export parity, or the price at which the stock must be purchased in London to allow the arbitrageur to come out even on the transaction, given the market price for the stock in New York. This London export parity is found by reversing the preceding example, in which the New York import parity was ascertained. The following equa-

tion, in which the New York market price is assumed to be \$89.375, indicates the general procedure.

$$91\tfrac{5}{8}=5\frac{(\$89.375-\$.1486-\$.04)}{\$4.8550}-5(£.025+£.02)$$

The London buying parity is thus equal to

$$\frac{5(\text{New York market price}-\text{interest loss}-\text{New York expenses})}{\text{spot cable rate for sterling exchange}}-5\times\text{London expenses.}$$

If the expenses and interest loss on the arbitrage are ignored, the formula becomes:

$$\frac{5\times\text{New York market price}}{\text{spot cable rate for sterling exchange.}}$$

VI

Instead of buying a sterling cable transfer in New York to pay for the stock he purchases in London, the New York arbitrageur has the alternative of instructing his London correspondent to reimburse himself by selling against him dollar demand exchange for whatever amount is needed to realize the sterling purchase price of the stock plus the London expenses. By letting his correspondent draw a sight draft against him he avoids the necessity of borrowing in New York for the purpose of buying a cable transfer, as the draft will arrive in New York together with the stock and will be met from the proceeds of the sale of the stock. In no case, however, will he have recourse to this form of remittance unless he can rely upon his correspondent to execute the sale of the dollar exchange to the best advantage.

It will be observed that when the New York export parity of the London market price of 91⅝ is \$88.655, the New York import parity of the same London price is \$89.375. There is thus a difference of \$.72 between the two New York equivalents of the same London quotation. This difference represents the expenses and interest loss connected with the two opposite arbitrage transactions, or the expenses and interest loss incurred in shipping the stock from New York to London, and from London to New York. It does not pay the arbitrageur, therefore, to execute an arbitrage in either direction unless the New York price is quoted either above \$89.375 or below \$88.655, provided the stock is to be transferred from the one to the other center, as has been assumed in the examples cited above.

It is apparent that like gold securities have their export and import points, which are determined by the cost of shipping them from the one to the other center. Unlike the gold points, however, which normally undergo trifling changes, the security shipping points fluctuate widely, moving up and down with the London market prices, which in a sense correspond to the par of exchange.

The arbitrageur, however, is under no necessity of actually transferring the stock between the two centers. Suppose he buys it in London at 91⅝, and sells it in New York at 89⅝. In lieu of mailing it to New York and realizing a profit of \$.25 a share (89⅝ less the New York import parity of 89⅜) he may carry the stock in London and remain "short" of it in New York. If in the course of the next few days the price in London is 91⅞, and the price in New York is 89, he will sell the stock he is holding in London and cancel his "short" contract in New York by entering into one for the purchase of the stock. His profit of ¼ in London is absorbed by the two brokerage commissions he pays, and if the interest charge on carrying the stock in London

is ignored, he comes out even in that city. In New York he nets a gain per share of $.675 less the transfer taxes of $.04.

By offsetting in this way one arbitrage operation with another made in the opposite direction after a favorable shift in the prices in the two centers, the arbitrageur undoes the position he assumed in both markets by the first arbitrage, and saves the shipping expense and interest loss which he incurs when he makes a physical transfer of the stock and remits funds from one to the other center. The prices in the two markets move up and down together owing to their tendency to mutual parity, and if during the interval between the performance of the two offsetting arbitrage transactions they are considerably modified, the arbitrageur experiences a gain in the one market and a loss in the other, and the gain more than balances the loss if he has successfully executed his operations.

VII

The price equivalents for American dollar bonds in New York and in London are determined in substantially the same manner as the corresponding stock parities. There are, however, several minor points of difference. First, the costs incident to the sale of bonds in London include the stamp tax which the British Government imposes on this class of securities. The tax is only levied once, and before the war amounted to £1 on an American bond of $1000 par value. During the war it was raised to £2, where it remains at present. Some of the stamped bonds find their way back to New York, where they at times sell for a slightly higher price than bonds not bearing the British stamp, as arbitrageurs purchase them in preference to unstamped bonds in order to save the cost of the British stamp when they remit them again to London.

Another difference between bond and stock arbitraging relates to the manner of contracting the sales of the securities in New York. As has been stated, in the case of a stock the arbitrageur sells the security in New York for delivery as a rule on the following day, and fulfils his contract by borrowing and going "short" of the shares pending the arrival of those he has purchased in London. He generally cannot follow the same procedure in connection with a sale of bonds, as they can usually be borrowed in New York only with difficulty, if at all. On that account the arbitrageur regularly sells bonds in New York with the option of delivering them at any time within the next 10, 20, or 30 days, depending upon when he expects to receive them from London. Contracts, stipulating these future deliveries, are called, respectively, "seller 10," "seller 20," and "seller 30." Similar contracts are occasionally executed in connection with stock sales.

Still another matter which the arbitrageur must carefully take into account in figuring bond parities is the differing methods by which the securities are quoted in the two centers. London quotes bonds "flat," as bond dealers express it, that is, it quotes a price which includes the interest that has accrued on the bonds since the payment of the last matured coupon, and which represents, therefore, the entire amount to be paid. New York, on the other hand, quotes bonds "and interest," the buyer paying, in addition to the market quotation, which refers to the percentage of the par of $1000, the accumulated interest on the current coupon. If for example, a $1000 bond bearing interest at the rate of 6 per cent which is payable semiannually is quoted 95, and a quarter of a year has

passed since the last coupon was due, the cost of the bond is \$965, or 95 per cent of \$1000, plus the accrued interest of \$15.

As has been said, except for the points of difference explained above bond parities are figured in the same way as stock parities. It will, therefore, suffice merely to show how the New York export parity of a bond is calculated. The method is illustrated in the following example, in which the London market price of a bond of \$1000 par value is assumed to be 93¼, that is, 93¼ per cent of £200, or twice £93¼.

Selling price of bond in London, 2×93¼or		£186.50
Stamp tax (pre-war)	£1.00	
London broker's commission, ⅛% of par	.25	
Total expenses in London		1.25
Amount netted in London, representing the amount of the demand draft the arbitrageur draws and sells		£185.25
Proceeds from sale of draft at the rate of \$4.85		\$898.46
Cost of shipping bond to London, 1/10% of par		1.00
Amount realized in New York from London sale of bond after payment of all charges in both centers		\$897.46

If the arbitrageur buys the bond in New York for \$897.46, or say \$897.50, he neither makes a profit nor suffers a loss. This amount is, therefore, the export parity of the London price of 93¼. It includes, however, whatever interest has accrued on the bond which must be deducted to quote the parity on the regular "and interest" basis. Suppose the bond bears 6 per cent interest payable semi-annually and two months have elapsed since the last coupon was due, so that the accrued interest on the bond amounts to \$10. Deducting this sum from the full price of \$897.50 and taking the per cent which the remainder of \$887.50 is to the par of \$1000 gives 88¾, which is the "and interest" quotation equivalent to the London price of 93¼.

The export parity of a bond quoted on this "and interest" basis may be computed more directly by applying the formula for the corresponding stock parity (page 523) to a bond of \$100 par value and subtracting the accrued interest, as shown in the following equation, in which the parity of the bond taken in the preceding example is calculated:

$$\left(\frac{£93\frac{1}{4}}{5} - £.10 - £.025\right) \times \$4.85 - \$.10 - \$1 = \$88.74625.$$

From this it is seen that the New York export parity of a bond quoted on an "and interest" basis is equal to:

$$\left(\frac{\text{London market quotation}}{5} - \text{London expenses}\right) \times \text{demand rate for sterling exchange} - \text{New York expenses} - \text{accrued interest on the bond.}$$

Similarly, the New York import parity of a bond quoted on the same "and interest" basis can be calculated directly by applying the formula for the corresponding stock parity (see page 525) to a bond of \$100 par value and subtracting the accrued interest. The parity is equal to the following:

$$\left(\frac{\text{London market quotation}}{5} + \right.$$

London expenses) × cable rate for sterling exchange + New York expenses + interest loss − accrued interest on the bond.

VIII

British owners of American dollar bonds must detach the coupons and mail them to this country for payment two weeks or so before they are due. On that account London begins to sell the bonds ex-interest, or without the coupon, and marks their market price down by the amount of the coupon 15 days or so before the next interest date. Arbitrageurs, therefore, during the time the bonds are quoted ex-interest in London, buy and sell them with the coupon in New York and without the coupon in London, and they must accordingly make due allowance for this in figuring the New York parities of the London ex-coupon price.

When an arbitrageur buys bonds with the coupon in New York and sells them without the coupon in London, he detaches it when forwarding the bonds to London and cashes it at maturity. The coupon is in the meantime an obligation of the corporation which has issued the bonds and its present or discounted value is offset against the accrued interest on the bonds in calculating the New York "and interest" export parity of the London ex-coupon price. This parity is therefore, equal to

$$\left(\frac{\text{London market quotation}}{5} - \right.$$

London expenses) × demand rate for sterling exchange − expenses in London − accrued interest on the bond + discounted value of coupon.

In the reverse arbitrage, when the arbitrageur buys the bond ex-coupon in London and sells it cum-coupon in New York, he delivers the bond minus the coupon to the buyer in New York upon its arrival from London, and gives him in addition cash to the amount of the coupon. He ignores as negligible the small sum of interest he loses by advancing the buyer the full amount of the coupon a few days before it is due. In figuring the New York "and interest" import parity of the London ex-coupon price he treats the cash he pays as an offset to the accrued interest on the bond, which he receives in New York in addition to the market quotation. The parity is, therefore, equal to

$$\left(\frac{\text{London market quotation}}{5} + \right.$$

London expenses) × spot cable rate for sterling exchange + New York expenses + interest loss + amount of coupon − accrued interest on the bond.

In the pre-war days, when arbitraging in securities between New York and London was active, the daily work of the bond arbitrageur consisted of the following routine. Each morning he received cable quotations from London for about a dozen standard American bonds that were actively traded in in both markets. The list was carefully selected and was permanent, being only changed when one of the bonds matured, or became inactive, and was dropped to make room for another that made a more satisfactory arbitraging medium. When the London prices arrived, the arbitrageur lost no time in comparing them with the New York prices for the bonds which he had previously noted on the ticker tape. Glancing quickly over the list, he first picked out the prices which seemed to show the best possibilities of a profitable arbitrage, and he immediately proceeded to calculate their New York parities. He confined his attention first to the import parity, because the London prices were more likely to be above this parity than below the export

parity on account of the £1 stamp tax on bond sales in London. After disposing of these more promising cases, he turned his attention to the remaining quotations of the list, and also to computing the export parities.

While speed was very necessary for the successful execution of an arbitrage, the operator nevertheless took time to make doubly certain of the accuracy of his figuring. His assistant made the first preliminary calculation, and if this appeared to bear out his original estimate, he verified it with an independent computation. If everything seemed to be in order, he immediately dispatched a cablegram to London for the purchase or sale of the bonds, as the case might be.

The London prices which the arbitrageur received were not firm offers to buy or sell, but merely the prices prevailing at the time the correspondent sent the cablegram. The arbitrageur was, therefore, obliged to run the risk of a loss by reason of an unfavorable shift in the London price pending the transmission of his order. Bond prices in those days, however, moved slowly, and the arbitrageur found that on the average he could afford to take the risk. Nor did he have to exercise any greater caution in attending to his exchange transactions. Fluctuations in exchange were then exceedingly narrow, the daily range of the sterling rate being seldom over ¼ cent, and he usually deferred his exchange operations to the latter part of the day, when he also arranged for his insurance.

Throughout the day the arbitrageur kept a careful watch on the course of bond prices in New York, and if any underwent a sudden change, he immediately cabled his London correspondent for a market quotation on the same bond. On receiving the quotation he figured out the New York parity, and if the result disclosed the possibility of a profit, he made his arbitrage. Frequently, however, he decided to save time by making his correspondent a firm bid or offer, which he based on the New York price, without waiting to learn the London price of the bond.

Only standard bond issues were the subjects of regular arbitraging. Even in the pre-war days, however, the London market in American securities was not broad enough to permit of transactions in lots of more than $50,000. This was, therefore, the maximum amount of a bond arbitrage. The minimum was about $10,000. If a London house wished to execute a deal involving a single lot of $100,000, or more, it had either to resort to the New York market or request a firm offer from a New York arbitrage house, which made it on the basis of the ruling New York price.

IX

While it is usual for London to quote American dollar securities as percentages of arbitrary sterling pars, an exception is made of a few mining stocks, the prices of which are expressed simply in so many pounds sterling. The reason for this is the fact that the shares are not dealt in in the Yankee market of the London Stock Exchange but in the regular mining department. A price of 10 for a stock quoted on this basis, for example, merely means that it costs that amount of pounds sterling. A somewhat different and simpler method is, therefore, used in computing the New York parities of such quotations. The export parity is simply equal to the difference between the London price and the expenses incurred in London, times the demand rate of exchange, less the expenses incurred in New York. This is shown in the following table.

London selling price of stock		£10.00
Brokerage charge in London, ⅛% of price		.0125
Amount netted in London		£ 9.9875
Proceeds from sale of £9.9875 of demand exchange at the rate of $4.85		$48.439
Cost of shipping stock to London, 1/10%		.048
New York export parity		$48.391

The New York import parity of a stock quoted in pounds sterling in London is equal to the sum of the London price and the expenses incurred in London, multiplied by the current rate for spot cable sterling in New York, plus the expenses incurred in New York and the loss of interest while the stock is in transit from London. This is shown in the table given below.

Before the war, when there was no British Government ban on international arbitraging and Yankee shares were actively traded in on the London Stock Exchange, the two markets tended to parity. London prices of the principal American shares were cabled to New York every morning, and their New York parities were computed and compared with the closing quotations of the previous day on the New York Stock Exchange. These advices were received before the commencement of trading in the New York market, and they frequently exerted a considerable influence on the opening transactions in New York. "What is London?" was one of the first questions stock market operators asked when they came down to Wall Street in the morning. As the London market opened five hours before New York, the response of its prices to overnight developments afforded some indication of the trend the New York market was likely to take at the commencement of dealings.

This intimate connection between the two markets was severed in the first days of the war, when the British Government prohibited stock arbitraging. Thereafter the markets moved independently of each other. The New York financial press continued to publish the New York equivalents of London prices for many months after the outbreak of the war, but the figures were not in any real sense equivalents, and were of little significance. Large disparities were shown every morning between the two markets, as in the absence of arbitrag-

Purchase price of stock in London		£10.00
Brokerage charge in London, ⅛% of price	£.0125	
Cost of shipping stock to New York	.01	
Total expenses in London		.0225
Amount remitted to London		£10.0225
Cost in New York of £10.0225 of spot cables at the rate of $4.8550		$48.66
Interest loss on $48.66 at 6% for the 10 days the stock is in transit from London	$.08	
Transfer taxes in New York	.04	
Interest loss and expense in New York		.12
New York import parity		$48.78

ing there was no means by which the prices could be brought together and the anomalous situation corrected.

X

Since the close of the war a few British stocks have found their way to this side, and they bid fair to become the subjects of active arbitraging between New York and London when these dealings are resumed. Their transfer has been effected by the conversion of the sterling shares into so-called American shares, which are certificates of deposit issued by a New York trust company against the deposit of an equivalent amount of British shares with its branch or agency in London. No limit is placed on the amount of such conversions, as anyone can deposit British shares in London and obtain in exchange American shares in New York. Complete interchangeability between the two classes of shares is assured by the fact that t e depositary trust company stands ready to deliver sterling shares in New York or give an order for their release in London upon the surrender to it of a corresponding amount of American shares. By this arrangement an arbitrageur can offset a purchase of British shares in London by a simultaneous sale of American shares in New York, and vice versa.

In every instance the arrangement was first instituted by a New York banking firm, whose object was to make a market for the British stock in New York. It entered into a contract with a trust company to act as depositary for the British shares and to issue its certificates of deposits. The owners of outstanding American shares were also made parties to the contract, which can be altered or terminated only by the consent of the possessors of a majority of the shares. No amendment of the contract, however, can deprive a dissenting holder of the right to exchange his holdings for British shares before the new provisions become effective.

For the service it performs in connection with the interchange of the two classes of shares the depositary trust company collects a fee from the beneficiary for every British share it gives or receives from him in exchange. In the case of the shares of the Rand Mines Company, Ltd., a gold mining company of the Union of South Africa, which is one of the British-owned corporations whose shares are convertible into certificates of deposit of an American trust company, the fee is 25 cents. Owing to the fact that the par of the deposited British shares is considerably less than the usual par of American stocks, one of the representative American shares is issued against a number of the British shares. Thus, in the case of the Rand Mines Company, one American share is put out against the deposit of 2½ British shares, the par of which is only five shillings.

The trust company acting as depositary for the British shares is the registered holder of the British stock, and as such receives the dividends that are paid in London. It converts these sterling dividends into New York funds by the sale of exchange, and disburses the proceeds to the holders of the American shares. Every holder is allowed a voice in the management of the foreign corporation through the depositary trust company, which obtains his views and votes his shares accordingly at the meetings of the corporation's stockholders.

PROBLEMS FOR THE BUSINESS EXECUTIVE

AUDIT DISCLOSURES

By H. D. Grant*

METHODS employed to hide a defalcation are so variegated and entail, when the audit is completed, so many adjustment entries to place the accounts in their true condition, that one wonders how the control of the manipulation has been conducted without exposure before the time of audit.

Some of the features connected with such a breach of trust are worth while describing, and are illustrated in the following case.

The A & B Company conducting a merchandise trading business decided to have an audit made of their books for the year 1920. The audit was to be made up to the trial balance of December 30, 1920, which was to be adjusted for any errors of omission or commission and the adjustments closed into profit and loss.

It was decided first to prove the footings of the cash record—this operation to be completed before attempting a reconciliation with the bank pass-book. This disclosed the fact that receipts, or debits, had been footed short $6000, and that disbursements or credits had an excess footing of $4000. The $10,000 had been received, entered, and properly posted to the accounts of the parties making the payment, but had not been deposited in the bank. Since it was necessary to have a debit offset equal to the credits made to Accounts Receivable, the Merchandise Purchases account was charged with $10,000, a fictitious inflation.

The owners, on receipt of this information, decided that they would have a complete detail audit for 1920.

In addition to the false footings in the cash record, it was found that cash sales amounting to $2000 had been misappropriated and entered as cash received.

The auditors then requested a detailed statement from each customer showing the cash paid by each during the year, so they could check the entries for receipts made in the cash-book. The reason for this procedure was the fact that the treasurer opened the mail and entered all cash, and, as was later known, was in collusion with the bookkeeper.

When the statements from customers were received showing the payments customers had made, they were checked against the accounts in the ledger. This check showed that credits of $12,000, and an excess credit footing of $4000 had been made to reduce by $16,000 the amount shown to be outstanding, which amount, though collected, had never been entered in the cash record, or deposited in the bank. The debit to offset this $16,000 plus $2000 representing cash sales was likewise charged to purchases.

By checking these customers' statements against the record of cash receipts, it was found that payment had been made by customers for small amounts to the extent of $4000, which had been entered, but not deposited; the amount of each entry was taken from another payment in the following manner.

Cash Record Entry Receipts	Gross	Disc't	Net
J. Smith and Co. Paid....	$5000	$250	$4750
Entered as..............	5000	385	4615
Difference of Discount....		$135	$135
T. Jones & Bros. Paid....	150	15	135

Therefore the net amount paid by Smith was entered $135 short, which amount was charged to Discount. Jones' account was credited and the Jones' payment was abstracted. The charges for Discount amounting to about fifty thousand dollars a year could, of course, easily stand an inflation of 8 per cent without detection by the owners, so this was taken advantage of, and discount was accordingly overcharged $4000 to take care of the substitutions.

* Member of the staff of W. B. Richards and Company, Engineers and Accountants, New York City.

THE A & B COMPANY

Working Sheet Year Ending December 31, 1920

Account of	Trial Balance Section						Fiscal Closing Section					
	Before Adjustments		Adjustments		After Adjustments		Trading Section		Profit and Loss		Balance Sheet Accounts	
	Debit	Credit	Debit	Credit	Debit	Credit	Cost of Sales	Sales	Expenses	Revenues	Assets	Liabilities
Cash	$15,974.20		$12,000.00	$12,000.00	$15,974.20						$15,974.20	
Import Fund	500.00				500.00						500.00	
Accounts Receivable	156,028.75		16,000.00	16,000.00	156,028.75						156,028.75	
Real Estate	300,000.00				300,000.00						300,000.00	
Buildings	808,000.00				808,000.00						808,000.00	
Equipment	147,500.00		1,746.25	2,390.25 2,792.56	144,063.44						144,063.44	
Good-Will	50,000.00				50,000.00						50,000.00	
Merchandise Inventory 1/1/20	184,567.39				184,567.39		$184,567.39					
Advance Charges	3,030.89				3,030.89						3,030.89	
Unissued Capital Stock Common	500,000.00				500,000.00						500,000.00	
Accounts Payable		$55,871.38		3,500.40		$59,371.78						$59,371.78
Notes Payable		35,000.00	20,000.00	20,000.00		35,000.00						35,000.00
Accrued Taxes		5,300.00		1,300.00		6,600.00						6,600.00
Accrued Interest on Notes		900.27				900.27						900.27
Bonds Payable 1st Mtge. 4%		100,000.00				100,000.00						100,000.00
Reserve for Depreciation		58,272.00		9,000.00		67,272.00						67,272.00
Capital Stock Preferred		1,000,000.00				1,000,000.00						1,000,000.00
Capital Stock Common		1,000,000.00				1,000,000.00						1,000,000.00
Surplus		26,520.50	62,000.00		35,479.50							35,479.50
Accrued Bond Int. Payable				2,000.00		2,000.00						2,000.00
Sales		1,376,491.17	2,390.25			1,374,100.92		$1,374,100.92				
Discounts Earned		30,120.37				30,120.37				$30,120.37		
Purchases	1,131,985.47		3,500.40	48,000.00	1,087,485.87		1,087,485.87					
Depreciation	25,000.00		9,000.00		34,000.00				$34,000.00			
Selling Expense	137,921.46		1,300.00 2,792.56	10,000.00	132,014.02				132,014.02			
Admin. Expense	132,067.19			1,746.25	130,320.94				130,320.94			
Discounts Allowed	60,600.14			4,000.00	56,690.14				56,600.14			
Interest Paid	3,300.20				3,300.20				3,300.20			
Bond Interest	2,000.00		2,000.00		4,000.00				4,000.00			
Reserve for Bad Debts			3,120.57	3,120.57	3,120.57	3,120.57			3,120.57			3,120.57
C & D Defalcation			62,000.00		62,000.00						62,000.00	
C & D Defalcation Reserve				62,000.00		62,000.00						62,000.00
Adjustment O K			48,000.00	48,000.00								
							1,272,053.26					
Merchandise Inventory 12/31/20							309,062.05				309,062.05	
Cost of Goods Sold							962,991.21					
Gross Profit on Sales							411,109.71			411,109.71		
Net Profit for Year 1920									77,874.21			77,874.21
Total	$3,688,475.69	$3,688,475.69	$245,850.03	$245,850.03	$3,740,485.91	$3,740,485.91	$1,374,100.92	$1,374,100.92	$441,230.08	$441,230.08	$2,378,659.33	$2,378,659.33

The audit of the disbursements showed that $10,000 had been covered by checks issued on fictitious vouchers for expenses, which checks were misappropriated, and deposited or cashed in some way by forged endorsements to the interest of the defaulters. Therefore selling expense was overcharged $10,000 and cash credited.

Notes payable showed a false credit for $14,000 and short debit footing for $6000 equal to $20,000 for notes which had been discounted, and the net proceeds misappropriated, the offset being a debit to purchases.

All these manipulations were made possible by the looseness of the system, the whole operation being under the control of the trusted party on whom no check of any kind was kept, nor questions asked.

Sundries			
To Adjustment Account			$48,000
Cash		$12,000	
Debits Short Footing	$6,000		
Credits Excess	4,000		
Cash Sales Not Entered	2,000		
Accounts Receivable		16,000	
False Credit Entry	12,000		
Excess Credit Footing	4,000		
Notes Payable		20,000	
False Credit Entry	14,000		
Debit Footing Short	6,000		

As the audit brought nothing of a questionable character to light as happening from January to June, 1920, it was assumed that all operation of the accounting work was honest up to June, 1920. The audit was considered completed and the above journal entries were made as of December 31, 1920, to adjust the balance to a true condition as of that date.

Since all these credits were offset by inflating the purchases, a journal entry was made to adjust the latter account to its true status:

Adjustment Account	$48,000	
To Purchases		$48,000

To charge former and credit latter account with false inflation.

To the $48,000 must be added the $10,000 charged to Expenses and the $4000 charged to Cash Discount, bringing the entire defalcation to a total of $62,000. This total was charged to those held responsible for the deficit by the following journal entry.

C & D Defalcation	$62,000	
To Sundries		
Cash		$12,000
Abstraction of Receipts		
Accounts Receivable		16,000
Collections Not Entered		
Notes Payable		20,000
Negotiated, Proceeds Misappropriated		
Expense		10,000
False Charge Checks Misappropriated		
Cash Discount		4000
Substitution for Receipts Misappropriated		

When these entries are completed a true profit and loss statement for the fiscal period can be made.

The charge of $62,000 is in the nature of a suspense entry, the same as doubtful accounts receivable, and if not recoverable a reserve should be set up to which the loss should be charged. The amount of the reserve, $62,000, is, of course, a charge against surplus account:

Surplus Account	$62,000	
To C & D Defalcation Reserve		$62,000

To set up a reserve to charge a possible complete loss for total misappropriations of C & D. Further adjustments found necessary as disclosed by the audit were as follows:

Sales	$2390.25	
To Equipment		$2390.25

Sale of the latter through error credited to the former account

Purchases	$3500.40	
To Accounts Payable.		$3500.40
Goods received and included in inventory but not recorded as a charge and credit to former and latter account		
Selling Expense	2792.56	
To Equipment		2792.56
Repairs to equipment charged to latter account in error		
Equipment	1746.25	
To Administration Expense		1746.25
Equipment charged to latter account in error		
Bad Debts Expense	3120.57	
To Reserve for Bad Debts		3120.57
2 per cent on $156,028.75 accounts receivable, set aside		
Bond Interest	$2000.00	
To Accrued Bond Interest Payable		$2000.00
6 months' interest on $100,000 at 4 per cent per annum		
Selling Expenses	1300.00	
To Accrued Taxes		1300.00
Estimated proportion to complete amount accrued to date		
Depreciation	9000.00	
To Reserve for Depreciation		9000.00
To adjust total depreciation to date		

The trial balance as shown before adjustments were made is first entered on the working sheet. After the audit is completed, the various journal entries that have been made and proved to the ledger, are

THE A & B COMPANY

Balance Sheet as of December 31, 1920

ASSETS

Current:			
Cash in Bank	$45,974.20		
Import Fund	500.00	$46,474.20	
Accounts Receivable	156,028.75		
Less: Reserve for Bad Debts	3,120.57	152,908.18	
Mdse. Inventory		309,062.05	
Total Current			$508,444.43
Fixed:			
Real Estate		300,000.00	
Building	808,000.00		
Equipment	144,063.44		
Total	952,063.44		
Less: Reserve for Depreciation	67,272.00	884,791.44	
Total Fixed			$1,184,791.44
Deferred Charges:			
Stationery and Supplies		475.00	
Commissions in Advance		700.00	
Unexpired Insurance		1855.89	
Total Deferred			$3,030.89
Intangible:			
Good-will			50,000.00
Total Assets			$1,746,266.76

LIABILITIES

Current:			
Accounts Payable	$59,371.78		
Notes Payable	35,000.00		
Accrued Taxes	6,600.00		
Accrued Int. on Notes	900.27		
Accrued Bond Int. Payable	2,000.00		
Total current		$103,872.05	
Fixed:			
Bonds Payable 1st Mtge. 4s		100,000.00	
Total Liabilities			$203,872.05
Excess of Assets over Liabilities			$1,542,394.71
Consisting of:			
Capital Stock Preferred		$1,000,000.00	
Capital Stock Common	$1,000,000.00		
Less: Common Unissued	500,000.00	500,000.00	
Outstanding		$1,500,000.00	
Surplus 1/1/20	$26,520.50		
Profits Year 1920	77,874.21		
Total	$104,394.71		
Less: Reserve C & D	62,000.00		
Surplus 12/31/20		$42,394.71	
Net Worth		$1,542,394.71	

EXHIBIT A

entered in the adjustment section on the working sheet with the exception of the merchandise inventory at the end of the year of 1920. The true adjusted trial balance as of December 31, 1920, showing all the accounts expressed in their true condition is then recorded. The accounts may now be closed into the Trading, Profit and Loss, and Balance Sheet divisions, which then include the inventory of merchandise as of December 31, 1920.

The report for the period is then compiled from the fiscal closing section which gives in proper groups the details to be recorded in the report. Inasmuch as the arrangement of items on the working sheet is parallel to their order of entry on the report, the work of preparation is facilitated.

By way of explanation it might be stated that the company owns the building in which the business is conducted. The equipment account is the control account for furniture and fixtures, automobiles, etc.

Upon reference to the working sheet it will be seen that the receivables and payables are the same after as they were before adjustment of the amount of the defalcation, with the exception of the bond interest of $2000 and the omission of the invoice from a vendor of $3500.40. The charges to the other accounts that had to be adjusted by transfers, were a result merely of a conversion of assets and income, such as is likely to happen in any business through wrong assignments when making the distribution of cost and income. The manipulated and misstated accounts to cover the defalcation as shown by the trial balance after adjustment were: Purchases, Selling

THE A & B COMPANY

Statement of Profit and Loss Year Ended December 31, 1920

Sales		$1,374,100.92
Cost:		
Inventory Mdse. 1/1/20	$184,567.39	
Purchases	1,087,485.87	
	1,272,053.26	
Less: Inventory 12/31/20	309,062.05	
Cost of Goods Sold		962,991.21
Gross Profit on Sales		$411,109.71
Expenses:		
Selling	$132,014.02	
Administration	130,320.94	
Depreciation	34,000.00	
Total Expenses		$296,334.96
Operating Profit		$114,774.75
Other Additions and Deductions:		
Discounts Allowed	$56,600.14	
Interest Paid	3,300.20	
Bond Interest Paid	4,300.00	
Bad Debts	3,120.57	
	$67,020.91	
Less: Discounts Earned	30,120.37	
Net Deductions		36,900.54
Net Profit for Year 1920		$77,874.21

Exhibit B

Expense, and Discount Allowed, as heretofore shown by the journal entries.

In this article no attempt has been made to consider all the subterfuges one is likely to uncover when investigating the manipulation of a system of accounts. The author has endeavored to show, however, that some method of internal check on all moneys received is necessary. One method is to require that the person who opens the mail keep a record of daily receipts separate from the cash record kept by the person making deposits and withdrawals. Moreover no credit should be made to any customer's account for items other than cash, except by means of an authorized journal voucher signed by someone in authority not connected with the cashier's department.

Inventories of merchandise should be operated at cost by a book record, and verified by a physical "skip check" at periods of short intervals. Under this system only portions of the stock are inventoried, and if found to check with the book records it is assumed that the balance has not been loaded on the book records.

Finally the value to any business of a professional audit at fiscal periods should not be overlooked. Knowledge of the fact that the books will be audited tends to safeguard the interests of the owner by acting as a menace to those who might fall into temptation if it were known that their work

would not be inspected. Moreover an audit is an essential to all business operations in that it fortifies one in his dealings with his banks.

In some cases, perhaps, the owner does not need to be safeguarded from any unfair practices on the part of those who are entrusted with the funds. Some employers treat their employees so fairly in the way of environment and compensation, that temptation could hardly take root. When, however, compensation is unfair and discontent reigns supreme, the work of the professional auditor is imperative to protect the owners' investment. In short it may be said that in the case of a liberal employer an audit is essential solely from the standpoint of banking; while in the case of a penurious employer it is essential not only from the standpoint of banking but also from the standpoint of protection, capacity to perform the work by those employed being equal in both cases.

In conclusion it might be well to state, that no matter how funds may be hidden by manipulating the accounts, a capable auditor will be able to disclose their hiding place and find out who is responsible. The auditor brings to light bad conditions, verifies by approval good ones, and is in a position to suggest improvements for efficiency in the system. That is why his services should be of paramount consideration to any owner of a business.

A PROBLEM IN BUSINESS LAW

By Thomas Conyngton *

BENJAMIN NICOLL, engaged in the coal business under the trade-name of B. Nicoll and Company, wrote the Pittsvein Coal Company as follows:

> This will confirm telephone conversation of this morning in which we have bought from you and you have sold to us 50,000 gross tons of your Pittsvein Fairmount gas coal, to be shipped in equal monthly instalments during the twelve months beginning December 30, 1916.

On the following day the Pittsvein Coal Company replied agreeing to the preceding letter. Both letters were on the business letterheads of the respective parties.

Nicoll's letterhead carried the following notice printed at the head: "All agreements are contingent upon strikes, accidents, delays of carriers, and other causes beyond our control."

The Pittsvein letterhead had the following in red ink: "Quotations subject to change without notice. All orders and contracts subject to car supply, strikes, accidents, and causes beyond our control."

To carry out the above agreement to the letter, would have required the shipment and delivery of 4166 tons each month, but up to September 1, 1916, the required amount of coal was never delivered in any month. For the coal that was delivered Nicoll paid.

During each of the three fall months the deliveries were 8400 tons, for more than one-half of which Nicoll refused to pay, whereupon the Pittsvein Coal Company brought suit.[1]

There was no dispute as to weight, prices, or times of shipment.

Nicoll's defense was that the plaintiff had not made deliveries as called for by the agreement.

The plaintiff replied that it was impossible to secure sufficient cars in the fall of 1916 to deliver the full amount of coal called for under the agreement and that in accordance with established usage in the coal business the company apportioned fairly the coal that could be shipped, among the plaintiff and other customers with whom they had like agreements, so that each should have his fair pro rata share.

Nicoll (1) denied the usage, (2) contended that the "written part of the letters constituted entirely and wholly the agreement

* Member of the New York Bar; Author of "Corporate Organization and Management," "Partnership Relations," "Business Law," etc.

[1] Nicoll v. Pittsvein Coal Co., 269 Fed. Rep. 968.

between them," (3) objected to printed matter on the letterheads being used as evidence, (4) objected to the practical action on the agreement prior to September 1, being considered as an interpretation of the agreement, and (5) objected to evidence of the trade usage being considered.

The usage was proved. The letterheads were admitted as evidence. The fact that the parties did not live up to the letter of the agreement for nine months prior to September 1, was not disputed.

This is a case where an agreement, entered into between persons engaged in the same business, phrased in simple English words, and relating to matters easy to understand by anyone, was affected by matters not written in the agreement or acts not set forth therein.

The case was decided by three things that were not written:

1. The usage when cars were short.
2. The evidence that both parties knew this usage as shown by the printed matter on the letterheads.
3. That they had acted on the usage in the first nine months of the agreed term.

If the coal dealer had agreed with someone not in the trade and there had been no reference to the usage in the agreement or on the letterhead, it would have changed the whole situation.

Likewise in most cases a written agreement is not varied by what is printed on a letterhead. If this case depended on the printed disclaimer on the letterhead the jury would not have been allowed to consider it. The printing on the two letterheads was no part of the contract but it was evidence that the parties both knew of the usage and had agreed on the basis of this mutual knowledge.

Likewise the waiver of the terms for nine months, in itself was no justification of further default, but as evidence of a trade usage it was good.

REVIEWS OF BUSINESS BOOKS

WEALTH—ITS PRODUCTION AND DISTRIBUTION

By A. W. Kirkaldy, Professor of Economics and Commerce, University College, Nottingham, England. 147 pp. E. P. Dutton and Company

REVIEWED BY GEORGE E. ROBERTS*

This is a readable little book, dealing with some of the fundamentals of economics, written by the Professor of Economics and Commerce in University College, Nottingham, England. The author has aimed at meeting a popular demand for a book not too formidable in bulk or style that would help the common reader to understand the important problems of these days arising from the development of modern industry and related to the social well-being.

He has succeeded very well. His treatment is simple, easily followed, and is carried far enough to give a good grasp of the truths upon which economic science is based.

He discusses briefly the importance of a study of economics, saying very truly that the natural laws which govern in the business world are analogous to those which exist in the physical universe, and that "a very large proportion of the evils from which we suffer nay, most of the discontent and frictions which keep the modern world seething, are due to ignorance of economic laws and tendencies."

He employs John Stuart Mill's definition of wealth, which is, that it consists of all things useful and agreeable having an exchange value. He also points out the difference between wealth and capital, the latter being that wealth is useful for the production of more wealth.

If the significance of the fact that capital is valuable only for the production of wealth for the public market was generally appreciated, that alone would teach the fallacy of most of the attacks upon capitalism. The truth is that capital is essentially a common community fund, and that under natural laws it tends to accumulate in the hands of the persons best able to use it effectively for the common welfare.

An excellent exposition is given of the law of diminishing returns, which briefly stated is that in the extraction of wealth from the natural resources a point is reached beyond which additional labor, although it may increase the gross return, will increase it in diminishing degree. Every farmer knows this by experience, and it is true also in the extraction of minerals, although allowance must be made for improvements in methods of production.

Naturally associated with the law of diminishing returns is the theory of "rent," to which he properly gives careful exposition, inasmuch as the principle involved is the same which underlies profits in trade and industry. The theory of rent, therefore, is one of the most interesting and fundamental in the whole study of economics.

It is simply that in a primitive community the most desirable land, whether on account of fertility or location, will be brought under cultivation first, and so long as there is enough free land equally desirable to satisfy in full the wants of the community, nobody will pay "rent" for land. The author says:

> The cause of the payment of rent for cultivated land is simply that with the increase of population and the consequent increasing demand for foodstuffs and raw materials, inferior soils have eventually to be cultivated, and the price of the supplies needed by the community is primarily regulated by the cost of production of that portion of the supply which is produced at the greatest expense. It must be borne in mind that productiveness or quality includes both fertility and situation. Transport facilities have been greatly increased during the past half century, but distance from a market still affects the question, especially in times of stress.

* Vice-President of the National City Bank, New York City.

This differential in favor of more desirable land is the basis of what the economist calls "rent." In common usage, the word applies to the total compensation paid for use of real estate, including return upon capital invested in buildings and improvements of all kinds, but as an economic term the word applies only to that part of the pay which arises from the location or from superior qualities inherent in the land.

The factor of rent in land values is very well illustrated by the land values prevailing in some of the middle western states of this country, where lands that within the memory of persons still living were sold by the government at $1.25 per acre are now selling as farms at several hundred dollars per acre. The reason for the advance is that there are no more such lands lying open to settlement in this country. There is a great deal more land that can be brought under cultivation, but a very considerable amount of capital must be expended upon it, for clearing, irrigation, or drainage, and time must elapse before homes can be established and before all community advantages will equal those in the long-settled localities. In competition with these new lands the established farms sell at values much above the mere capital cost of development.

The author points out that this rental value is based upon an actual preference in the minds of those who pay the difference, and represents an actual utility to them. The question of who should enjoy this rental value, whether it should belong to individual owners, or, as some people advocate, be seized by the state on the ground that it is a value created by the community, is a matter for separate discussion. The first thing is to point out how the rental value arises.

An examination of the subject of profits reveals practically the same phenomenon. The recent investigation of industrial waste conducted by an expert committee representing the Engineering Council of The Federated Engineering Societies has shown that the difference in cost of production among individual concerns in the most important lines of industry frequently runs as high as 50 per cent. There are no such differences in their selling prices, for quality considered they must all sell at about the same price, and the result is that profits vary from the concerns making very large returns on their investment down through those who are making moderate and small returns to those that are making nothing or losing money.

The concerns making large profits are operating more economically than their rivals. They may have a better location for business, they may have a better productive equipment, or a better organization, or they may exercise better judgment in buying goods or granting credits, or they may develop superiority in other ways which give a larger volume of business.

The most interesting thing about the subject of profits is that the public generally sympathizes with the producer or dealer whose costs are high and profits small, and shows antagonism toward the successful concern, whose costs are low and profits correspondingly high. It assumes that the latter is charging too much, although it is charging no more than its rival who is barely able to keep his head above water.

Here, as in the case of farm products, the market price is usually determined by the cost of that portion of the supply which is produced at the highest cost and which is necessary to complete the supply. The low-cost producer enjoys the shelter of an umbrella used by the high-cost producer.

The public interest is in low cost production, even though at the moment it seems to get no share of the savings, for the public is sure to gain eventually by the elimination of waste and accumulation of capital. The owner of new capital will want to get it into use somewhere, and wherever he employs it he will have to give employment to labor and produce something for the public market.

It is only a question of time when the low-cost producer will drive the high-cost producer out of the market or compel him to adopt low-cost methods. The first people to introduce the economies successfully have an advantage and make large profits. The profits that they make are a proper reward for their enterprise, and they cost the public nothing. Gradually the low-cost methods will be generally adopted and competition will compel a reduction of prices to the

public. This is the regular course of industrial progress.

Professor Kirkaldy gives an excellent discussion of the labor factor in industry. First he deals with the subject of "productive labor," showing the fallacy of the claim that only certain occupations dealing directly with the natural resources are productive. It is said, for instance, that the railroad only moves things from one place to another, while the farmer really creates them. If, however, we are going to be so strict in our language, the farmer does not create anything; he only makes the conditions favorable for the natural forces to produce the crops, and the railroad man handles other natural forces in such manner that the products are transported to a market. The farmer would soon find it not worth while to produce things that could not be sold, and if a railroad can transport wheat a thousand miles and lay it down at a given place as cheaply as it can be produced in that place, why is he not a producer as truly as the man who grows it there?

In the same sense, the merchant, the banker, and everybody who plays a useful part in the exchange of goods and services is a producer.

The author says:

> Then we come to other types of workers—the teacher, the doctor, the minister of religion, the actor and musician, the magistrate, judge, and policeman, the member of Parliament, state officials from the lowest to the chief of the state. What shall be said of all these? The teacher in school and university influences the material out of which various types of future workers are being moulded. Few professions probably give rise to so much disappointment, but looking over a period of years, it is evident that education has achieved remarkable things for the community. The work of production has been very considerably assisted by the teaching of the school and classroom, and by the investigations carried on in the laboratory. The doctor and the surgeon have kept the community in better health and condition for work and effort than would have been the case had there been no one charged with this responsibility. The minister of religion has preached an ideal—he has inculcated morality and high thinking. In proportion as his efforts have led men to work more honestly and to take a saner view of life and its responsibilities he has had an effect on production. Modern society, too, requires the institutions connected with the maintenance of law and order. Without security the work of production could not proceed, hence the necessity for police, magistrates, and judges, Parliament and the government departments with their staffs of men skilled in administration. Were the efficiency of government adversely affected, production would suffer. A well-ordered state is a necessity. Anarchism and material well-being could not exist together.
>
> The actor and the musician too may have their sphere in helping on the productive work of the world. The worker with hand and brain gets wearied and needs recreation. To the extent that healthy amusement helps to recreate the jaded worker, the providers of that amusement are assisting in the productive work of the community.
>
> Thus the modern teaching on this subject is that all those workers who either directly or indirectly assist the work of production should be classed as productive workers.
>
> Can an unproductive worker be mentioned? Yes, unfortunately there are those whose efforts tend to diminish the productivity of the community. The book, the picture, or the play that panders to the lower instincts, and thereby weakens the will and character of reader or auditor may result in weakening the ability of the worker. The agitator whose work is destructive, but who cannot suggest what can beneficially take the place of what he is trying to destroy. Such work as this is unproductive because it neither directly nor indirectly helps on the well-being and productiveness of the community.

The author deals at length with the theory that labor—in the sense of manual labor—produces all wealth and shows the contribution of the brain-worker in vastly increasing the productivity of the manual worker. He shows that the condition of the masses has been raised far above what it was one hundred years ago, and this comparison could be made still stronger by considering what conditions would be now with the increased population if methods of production and transportation were the same now as then.

The greater the production of all necessary and useful commodities, the better can be the position and the higher the standard of living of every member of the community.

This is the most important truth in economics. A thorough understanding of it throughout all classes would bring harmony and co-operation where there is now so much antagonism and strife, and

raise the standard of living of the entire population.

The lesson is not alone for the wage-earning class; the truth is scarcely better known in the employing class. The fundamental purpose of all business is to provide for the needs and wants of the people, and when this purpose consciously dominates all activities there will be a more rapid advance of civilization than has ever been known in the past.

The theory that labor alone creates wealth and that the services of leaders and managers are not needed or are overpaid, is disproved every time an attempt is made to get along without them. The colossal failure in Russia being the latest and most conclusive example. Every such attempt results in a falling off of production far in excess of the share that had been taken by the capitalists and managers.

There are two great fallacies in the theories of those who attack capitalism, or the right of private property:

1. The idea that capital and the capitalists contribute nothing to production, or that capital will be accumulated without any reward.

2. That the owners of capital are the only people who get any benefit from the accumulations.

The most common everyday experience teaches that people will work harder where the results will clearly belong to themselves and their families than they will for the general good. That is the key to social progress. The incentive of personal gain is needed for every individual in the population. Every socialistic experiment—and there have been thousands of them, has demonstrated the soundness of this principle. The most progressive society is that which holds out the largest opportunity to individual ambition and effort, always however, upon the condition that such ambition and effort must serve not only the individual but the common welfare as well. So long as an individual strives in any useful occupation to advance his personal fortunes by services that are helpful to society, his efforts should be encouraged. Efforts that are detrimental to society are illegitimate and should be suppressed.

As to the second fallacy named, it is disproved on every hand. It might as well be said that nobody gets any benefit from railroads but the owners of railroad securities, that nobody gets any benefit from modern farm machinery but the farmers, and that nobody ever benefited from the invention and development of the steam engine unless he owned an engine. All of which of course is absurd.

The share that capital gets of the proceeds of industry is enormously overrated by common opinion. It frequently develops that bodies of workmen believe that the sums paid in dividends by the works in which they are employed greatly exceed the sums paid in wages, whereas in fact dividends are usually very small as compared with wages. Since the income tax was levied upon corporations in this country definite figures for their disbursements have been available and Professor David Friday, of the University of Michigan, has made a study of them. He found that the year 1917 was the one in which profits were largest, it being a year in which ordinary working profits were increased by rising prices. His compilation of the distribution of "value added" in the mining, manufacturing, railroad and public utility industries in 1917 is as follows:

		Per cent
Wages and salaries	$11,100,000,000	54.3
Taxes	2,360,000,000	11.5
Interest	1,180,000,000	5.8
Dividends	3,070,000,000	15.1
Surplus	2,731,000,000	13.4
Total	$20,441,000,000	100

The total distribution to capital was in interest and dividends, which aggregate 20.9 per cent of the total values produced. It does not follow, however, that recipients of this 20.9 per cent devoted all of it to themselves, for a considerable proportion of such current income is put into new investments, which means returning capital for the enlargement and development of industry.

Nor does all of the money paid out for interest and dividends go to rich people. The savings banks and life insurance companies are large holders of interest-bearing securities, and there are many small stockholders in large corporations. The

last statement of stockholders of the Pennsylvania Railroad Company showed over 140,000 of them.

The "surplus" which appears in the above analysis, is surplus earnings retained in the industries and so long as it is undistributed is a common fund, increasing employment, increasing production and safeguarding the industries. Only as it is withdrawn can it be properly considered chargeable to the stockholders.

The essential truth revealed by any analysis of the distribution of current earnings is that all wealth employed in production serves the entire community, and that self-interest leads every man to put all of his income above what he devoted to consumption for himself and dependents to what is really a public use.

The one exception we would take to Professor Kirkaldy's book is to his criticism of scientific management, as practiced in the United States. He seems to be under the impression that the system sets certain high standards of achievement and would deny employment to all who failed to come up to those standards. He says that this policy if carried to its logical outcome would mean employment for only a small percentage of the population.

We do not think he is correctly informed as to the practice. If the results have been such as he describes in any instances it probably has been because union rules interfered with the proper working of the policy. As ordinarily put into effect the system seeks to establish standards of normal achievement and grades the pay accordingly.

The book is well calculated to introduce the reader to a study of economics and to excite an interest in it. It is so concise that it might well be distributed in quantities among foremen and labor leaders and could hardly fail to do good, not only among them but among employers as well. The great need of the time is for just such knowledge of principles as it inculcates. The chief trouble with society today is that it has advanced just far enough to be discontented with existing conditions, and is so impatient and uninformed that the efforts to improve conditions are largely injurious rather than helpful.

THE HUMAN SIDE OF RETAIL SELLING

By Ruth Leigh. xxi, 228 pp. D. Appleton and Company

Reviewed by C. T. Murchison*

Progress in retail merchandising consists more than ever of complicated service to the public. The various aspects of this service have become so numerous as to be astonishing. But what with increasing competition on the one hand, and a more discriminating public on the other, the end is not yet in sight.

However, the steps so far made have, from the merchants point of view, demonstrated one fact, and that is that no program of service can be markedly successful which extends beyond the interest and understanding of the sales personnel. A well-ordered stock, a finely conceived advertising campaign, an admirable location for trade, all may go for naught if the people who stand behind the counter to serve fail to get the spirit of the institution.

There is no exasperation such as the exasperation which besets the tired shopper when she, seeking understanding gets stupidity, or seeking sympathy gets indifference, or desirous of time-saving gets listlessness, or expecting accuracy is treated to one error after another. How frequently does one hear the familiar remark, "I do most of my shopping at Blank's; it is a pleasure to go there; the salespeople give you real service, and treat you like a lady along with it; and besides the store has real tone and refinement."

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It is fortunately true that no store can possess a high degree of tone without a correspondingly high type of sales force.

But how to get it? There's the rub. Professional training and professional pride in retail selling have been slow in coming. The vocation has not commanded the respect or assumed the dignity which it merits. The reasons therefor, it is to be hoped, lie buried in the obsolete merchandising policies of a past generation. From the managerial point of view a new day has already dawned in the history of the profession, if it may be so called, as is evidenced by the place accorded it in the curricula of many of the leading colleges and universities. New York University and Harvard stand out as particularly notable in this connection. Alongside journalism, accounting, engineering, and agriculture, now stands merchandising in its functional and managerial forms.

But, to the great masses of "shop girls" influences from these higher collegiate circles will be slow in coming. And it is moreover very doubtful if they can be reached effectively by any formal type of educational institution for training in the actual processes of selling, certainly not to any appreciable extent in this generation.

The responsibility for their training will continue to devolve largely upon their employers, and it is probably safe to say that increasing success of the employer-merchants will be in rough proportion to their success in imparting to their sales-force, not only proficiency in work, but also a sense of dignity and self-respect. A merchant will hardly have occasion to be proud of a clerk who is not proud of his job.

To arise fully to his responsibility in this connection, the merchant, as ever, will have to draw largely upon his own sympathy and personality, or upon those of his educational director, but valuable supplementary means are no longer lacking as they have been in the past. Reading matter of the type which appeals and instructs when independently read by the salesman or saleswoman is making rapid strides both as regards quality and quantity. To this type of reading matter Miss Leigh has made a notable contribution through her book, "The Human Side of Retail Selling."

In the matter of principles, Miss Leigh makes no claim to originality. It is the fact that she has taken principles long established and put them in "concrete, human form" that makes her work distinctive. The book is highly illustrative in character which assures interest and ease in understanding. It is, in addition, inspirational in tone, and will hardly fail to arouse, somewhat, latent idealism into association with practical accomplishment.

The author treats her subject matter under five general headings: "The Salesperson," "The Merchandise," "The Customer," "The Sale," and "The Sale Routine."

Part I, endeavors thus to inculcate in the salesperson a sense of her responsibility and importance:

> Stop and consider yourself and your work. You hold a recognized, important position that demands education and training. Do you appreciate now that salesmanship is a skilled, dignified profession? True, there are other equally skilled professions—stenography, trained-nursing, bookkeeping, costume designing—any number of representative fields that one may choose. But the profession of salesmanship is more difficult and more complex than any of these. In one way it requires more skill than stenography, designing, or nursing because retail salesmanship involves dealing with complex human nature and it requires shrewd insight into the thoughts and feelings of customers and fellow workers. A salesperson to succeed must know both people and things. Furthermore, she requires an intimate and technical knowledge of merchandise.

Dignity and self-respect cannot fail to go hand in hand with a doctrine like this. But in the main the discussions are more specific. The salesperson is instructed in the art of caring for her body, in the proper modes of dressing, in the qualities of tact, patience, judgment, cheerfulness, imagination, memory, enthusiasm, initiative, and self-expression.

Some illustrative advice is:

> It is good tact on your part to avoid making a customer ask to see "something less expensive." Most customers, no matter how self-possessed they may seem, feel a certain embarrassment at having to request a cheaper article than originally shown. If a shabbily dressed young girl, therefore, asks to see "a pair of brown kid gloves," you will begin by showing her low or medium-

priced gloves first. Then, if she wants any better quality, you can show them later.

Most shoppers will also approve the following:

> Approach customers as if you enjoyed serving them; show your stock as if you were proud to do so, as if you yourself admired every article. Make your customer feel that you are enthusiastic about assisting her. Let your enthusiasm appear natural and not artificial or stimulated, or it will have a hollow note.

And there are but few who would doubt the soundness of Miss Leigh's remarks about courtesy:

> Department stores today compete not only on merchandise, but on extra service as well. They are proud of the assistance they try to give customers . . . when possible, bring over a chair for a customer. . . . On a hot day you will try courteously to hand a customer a fan. Or, if she seems particularly hot and tired, you may offer to get her a glass of water. If she is carrying many parcels, you will courteously ask: "Would you like to have all your packages wrapped together, so that you may carry them more easily?"

What a salesperson should know about merchandise, the arrangement and display of stock, constitute the subject matter of Part II. In learning merchandise, the salesperson is urged to find the answers to the following questions:

> What are its uses? What is it made of? How is it made? What style or design is it? Who made it? What different kinds of the same article have we? What interesting history or background is connected with the article? How much does it cost and why is it priced that amount?

The author illustrates the value of the answer to one of the above questions as follows:

> "Why are full-fashioned hose more expensive than seamless ones?" a customer will inquire.
>
> If you can answer readily, you will probably make a sale. "You see full-fashioned hosiery is woven according to human form, so that the ankle and toes are carefully shaped to fit the foot. They are woven flat, and then finally sewn together with a seam at the back. This makes them carefully fashioned or shaped, so that they fit the foot and limb. Seamless hosiery on the other hand, is made in one piece, like a round tube, and then pressed to resemble human form. When washed it usually loses its shape. There is a difference in the manufacture, you see; that's why full-fashioned hose cost more than the seamless."
>
> "I see now. . . . You can give me three pairs of those full-fashioned lisle."

Part III, though brief, consisting of but two chapters, introduces the saleswoman to the various types of customers. She is made familiar with the irritable customer, the inconsiderate customer, the deliberate customer, the snobbish customer, the suspicious customer, the decisive customer, the absent-minded customer, the uncertain customer, the timid customer, mother and daughter customers, and so on. Each one constitutes a different problem, demands a different analysis, and a different procedure.

Necessarily this part of the book cannot be other than merely suggestive but in this respect the author has succeeded well for the purpose in hand. A wide excursion into the field of psychology would be profitless for the readers.

Much more of definiteness and finality is found in Part IV, where the various factors actually entering into the sale are discussed. The method, time, and speed of approach to a customer are described with minuteness of detail, there is considerable cautioning relative to the introductory remarks, and worthy advice as to the manner of presenting the merchandise.

> In presenting your goods talk with confidence. Remember that your words and your attitude toward your merchandise are more or less contagious, and your customer is instinctively influenced by your presentation. . . . Never say anything about your goods of which you are not sure. Do not "think," or "believe," or "guess." Know and present that knowledge with confidence and clarity.

In the final division of the book, the saleswoman is made acquainted with the sales forms, records, and routine work. They are simply presented, but with enough completeness to enable her to grasp her working relation with the other functions and departments of the store.

The reviewer is one of those who believe, as a rule, in judging a book mainly in the

light of the purpose for which it is written. Final judgment of the book under review must take cognizance of the fact that it was written for sales*women,* not sales*men.* Moreover, the customers which it has in mind are feminine customers exclusively. And the type of store which it assumes is the department store. The psychology of salesmanship in so far as it applies to these three factors in combination is effectively presented in the book. In the main the author keeps free of mere platitudes. She has something to tell which is worth while for the average salesgirl, and she tells it in a way that is interesting, clear, and pertinent. Consequently there is much to commend about the book.

In places she is a little too enthusiastic, and a literal following of her advice might on occasion lead to overpressure upon customers to buy. There is such a thing as being too clever in selling. The customer who a week later realizes that he has been led into buying something which he really didn't want, is not a pleased customer. There are circumstances under which it is well to advise customers not to buy.

But then it is to be presumed that Miss Leigh knows her girls too well to take seriously the possibilities of excessive zeal.

TEXT, TYPE, AND STYLE: A COMPENDIUM OF ATLANTIC USAGE

By George B. Ives. vi, 305 pp. The Atlantic Monthly Press

Reviewed by Frances Lester Warner*

This book clears the air. Anyone who ever puts words on paper will find it useful. Every writer, editor, keyboard operator, reader, printer, copy-holder, and printer's devil, will find his pet problems neatly stated in good plain terms.

If authorities conflict, the book rapidly tells how they conflict. And then it tells, equally rapidly, what the author himself has decided to do about it, after a lifetime of work in the editorial and proofreading offices of *The Atlantic Monthly.*

"One can scarcely deny," says Mr. Ives, "that many proofreaders are stupid, many pig-headed, and a very large number wise in their own conceit, and 'sot' in their ideas." This book is neither pig-headed nor sot. It admits squarely that in the English language many questions cannot be settled by a thundering "Right" or "Wrong." The author knows exactly the problems that do come up, even with the most experienced writers and printers. He chooses the questions that bother grown people, not the conventional "common errors" of school-days.

It is true that there are definite rules to cover all elementary matters; a glance at the index enables the reader to turn instantly to such items as the use of "O" and "Oh," "as though" and "as if," "nor," "SOS," and "should" and "would." But these things and their like are summed up in short order. The real business of this valuable book is with disputed matters that trip the expert.

The chapters are good reading. The writer allows us to hear some good, stout discussions between authors and readers, regarding technical and stylistic points. "Commend me to the whole tribe of proofreaders for readiness to teach Peary where the pole is, or the Lord Chancellor who are in the Upper House." This outburst, Mr. Ives explains, was called forth from an eminent contributor to *The Atlantic,* by a well-meant query on a proof-sheet.

The way in which we are taken into the author's confidence upon contested points gives us a sense of actually watching the editorial struggle for accuracy, and makes it easy to remember the conclusions arrived at. The conclusions are not thrust down our throats either; we are simply given the arguments, and the reasons that led to the decision. But the decision is so

* Member of the Editorial Staff of *The Atlantic Monthly,* Boston, Mass.

clearly stated that the downright "wrong" usage fades into insignificance, and only the possible correct forms remain.

Illustrations of faulty usage are never taken from the usual cooked-up examples of juvenile blunders in English. They are taken from passages culled from "copy" sent in by the most renowned authors of two continents. Consequently, the illustrations are spicy reading in themselves.

As the author remarks:

> One can but wonder and take courage when one learns of the sins against good English committed by some of the greatest writers, and how curiously addicted some of them seem to be to special idiosyncrasies of syntax or punctuation.

Some notion of the range of the book comes from a glance at the chapter heads: Proofreaders and Proofreading, Spacing and Syllabification, Punctuation, Abbreviation, Capitalization, Italics, Spelling, Compound Words, Relative Pronouns, Number, Omission of Words, Divers Matters.

"Text, Type, and Style" is a book of divers matters well cleared up. It is a compact reference book, with a quick-service index. It is also a book where matters once looked up will stick in the mind, because they are so freshly stated that the reader finds it impossible to misunderstand, and next to impossible to forget.

The author's broad-minded acceptance of facts as they are, is suggested by the following remark:

> One who is not familiar with the business naturally finds it hard to understand how the same perfectly obvious error can go undetected through proof after proof and be passed by reader after reader; but it always has happened, it happens now, and it always will happen.

It will happen a trifle less frequently, however, when every writer, every editor, writer of advertisements, reader, stenographer, printer, and printer's devil has read this little book.

THE HIGH COST OF STRIKES

By Marshall Olds. xx, 286 pp. G. P. Putnam's Sons

Reviewed by Harry W. Kimball*

The State Department of Mediation for Pennsylvania reports that in the first six months of 1921, $25,400,000 were lost in wages alone in that state because of strikes. No further proof is needed of the statement that strikes are among the most destructive weapons of industrial warfare. But if any further proof were required Mr. Olds' book furnishes it in abundant measure.

A strike today is a thing of menace to the community. It concerns not only the men who strike but sends its baneful influences afar to the injury of many other persons. So tied together are all classes and groups within the nation, so closely united are the interwoven fibers of the social life, that even a little strike, such as that of a few hundred dock workers in New York City, may mean the loss of many thousands of dollars all along the Atlantic seaboard, and added expense to perchance a million people.

A strike flaunts before the mind the crudity of the economic organization of society. Strikes, therefore, must cease, and the facts gathered in this book will help mightily to that end. The waste in time and labor and materials is too stupendous to permit the further use of this weapon of industrial warfare. When strikes come, the production of the things we want and need ceases; costly machinery stands idle and deteriorates through disuse; men loaf on the street corners and in the market place; they acquire habits of idleness and become parasites upon the community. The injury inflicted upon other human beings is far-reaching.

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A few of the statements in Mr. Olds' book which emphasize this fact are:

The price of potatoes throughout the whole northeastern section of the country was raised in April 1920, over four dollars more per barrel because of one specific strike.

Many people throughout the country during and after the war sought relief from the high price of meat by eating fish, but the price of tuna went up fifty per cent in 1919 and thirty-five per cent more in 1920 because of two strikes.

When you had to pay $55, $65, or $75 for a suit of clothes during 1919 and 1920 about $20 to $30 of that price was due to strikes.

The average New Yorker is paying today $32 more rent every month because of strikes or threats of strikes.

In 1919, the first week of the coal strike, two hundred thousand workers in Detroit alone were idle, ninety per cent of all factory workers in Indianapolis dropped to half time, and 250,000 workers in Chicago had their wages entirely cut off.

One billion dollars would be a most conservative estimate at which to put the wages lost in 1919 by workers who did not strike because of strikes by other workers. This means that ten million workers, entirely in addition to all they suffered from raises in prices due to strikes, also lost over one hundred dollars each out of their own pay envelopes because of strikes in which they had no voice or other interest.

These startling facts are abundantly substantiated by the figures and details which Mr. Olds gives.

It is worth while to compare the point of view of this volume with that of the book by Mr. Bing,[1] entitled "War-Time Strikes and Their Adjustment." Indeed these two books, taken together tell very well the story of the strikes in this country from 1916 to 1921. Mr. Bing says quite a little about the rising cost of living as a cause of strikes but ignores the strike as a cause for the increased cost of living. He sees the benefits which have accrued to groups of workers in shorter hours, higher wages, and through recognition of the union, but he fails to take into account at all the baneful effect upon the community, and upon large masses of the workers, which these same strikes have produced.

In the review of Mr. Bing's book in the September number of *Administration* I said that Mr. Bing had not recognized sufficiently the harmful influence upon the minds of the workers because their demands had been granted so easily during the war. Even though many of these demands were just, yet the ease with which they were secured, gave to great numbers a false idea of their rights and a swollen sense of power. Mr. Olds' book which deals almost exclusively with the strikes which followed the armistice proves this to be the fact.

The workers, for example, would not follow the advice of their own leaders:

The printers' strike in New York which cut the wages of one million five hundred thousand other men was condemned by the printers's own international union as unwarranted.

The whole series of railroad strikes in the spring of 1920 which cost the public more than the coal strike itself, were popularly known as "outlaw strikes," because they were condemned as unjustified and combated as such by the officials of labor as by the employers themselves.

Of the 3,950,000 workers who went on strike in 1919, 1,053,256 struck for reasons which labor officials themselves refused to recognize, and otherwise condemned as unwarranted.

Strikes became a mania without reason and often without demands. In 1920 several thousand American longshoremen went on strike and refused to load American vessels because the Irish Government had arrested an Irish political criminal. One of the most serious clothing strikes in Chicago in 1919 was called because the manufacturers refused to pay a huge blackmail to certain union officials for not calling the strike.

Indeed Mr. Olds says:

Roughly some fifty per cent of all after-the-war strikes must at once be written off as strikes which neither gained anything for anybody nor seriously attempted to gain anything for anybody except perhaps for certain professional labor leaders.

One reason for the inefficiency of the worker when high wages came his way was that now he had the means to obtain the pleasures for which he had longed. This brought late hours, intense nerve thrills and high-pressure indulgence, and the consequent weariness was shown by his failure to measure up to a first-class workman on the job. This nerve tension which emphasized

[1] See review of this book in *Administration*, September 1921, p. 395.

the desirability of leisure made the worker the facile tool of the unscrupulous labor leader because, to the worker, the call to a strike coincided with the call of his nerves. This is a sound psychological reason for the ease with which strikes were brought about in the after-war period.

Mr. Olds shows that strikes for personal power and for union monopoly have largely replaced strikes for higher wages and for shorter hours. The unions are so strong, they have so largely achieved all that may be hoped for in the way of higher wages and shorter hours, their treasuries are so rich, and their annual dues so large that most strikes now have as their root cause the desire for control or mastery.

> All the underwear manufacturers in Cohoes, N. Y. were shut down over a month during the spring of 1920 simply and solely because of a fight between two rival unions.
>
> Ninety-five per cent of all strikes in the building trades in 1919 were called simply as incidents in fights between rival unions for authority or jurisdiction.

Another indictment against recent strikes is that they have often been engineered by radicals. These people want unrest; they desire disturbance; they feed on trouble; they rejoice in disputes; they delight in fighting; they want to destroy the American system of industry. The Amalgamated Clothing Workers of America with a membership of four hundred thousand has for its fundamental motive, according to the preamble of its constitution, the breaking down of the present industrial system.

The conclusion of Mr. Olds is:

> The modern labor monopoly is often controlled by men either so bigoted or so arrogant through their rapid rise to power that they overstep all bounds in flouting public opinion and attacking public interest.

In speaking of industrial democracy as a possible cure for present evils Mr. Olds says:

> The American people and certainly American employers have no intention of actually putting the management of industry under control of mere majorities of the workers. The fundamental question, therefore, arises whether employers can afford to commit themselves to the principle of majority vote in industry and thus start such a dynamic self-interested force as labor, thinking along a line which the employer is not willing to carry to its logical conclusion.

The whole teaching of the book may be summed up by this quotation;

> That strikes can no longer be regarded merely in the light of conflicts between capital and labor, because the tremendous costs they are imposing upon the public are of vital public concern—that from the very nature of the situation the public alone is able adequately to protect itself against these losses, and that the public has a right to so protect itself—is today becoming more and more widely recognized.

LIBERALISM AND INDUSTRY

By Ramsay Muir. xiv, 208 pp. Houghton Mifflin Company

Reviewed by Frederick K. Melvin *

Readers of *Administration* should distinctly understand that this volume presents the British point of view. Whatever may be the personal opinion of the American reader, he will admit that Professor Muir approaches the subject with a most liberal attitude of mind.

Professor Muir seeks to find the middle road between the extreme British conservatism on one side and the revolutionary policies of certain labor leaders on the other. Because America is facing some of the problems which now confront England, his researches should interest American executives.

The book is the outcome of certain discussions carried on by a small group of industrial executives who were asked by The Manchester Liberal Federation to consider what should be the main lines of a Liberal industrial policy. Incidentally it may be

* Economist and Statistician.

said that the volume has had the encouragement of Lord Haldane and the official approval of The Manchester Liberal Federation.

Its introduction contains the following statement of present-day conditions:

> There never was a time when redefinition was more necessary, or when the old formulae seemed to be more barren, than today, when the whole world is dissatisfied with its old modes of organization and is seeking impatiently for the clue to a new order of things. In face of such conditions, vague talk about "Liberal Principles" is felt by many to be little less than an insult. What men demand, and rightly demand, is a clear exposition of the answer which the Liberal spirit will give to certain criticisms of the existing order, a clear definition of the evils which it recognizes, and a clear account of the way in which it will try to remedy these evils.

For American executives not familiar with political conditions in England the following paragraph about the Labour Party will be illuminating:

> Taken as a whole, the Labour Party is inspired by a genuine zeal for a better order of things. Its members desire fair play and a "square deal" for all men. Most of them in their hearts believe passionately in liberty and in individuality, and hate the idea of the exercise of tyranny by any group or class, even their own, or by any body of officials. They are, in essence, Liberals; and only do not call themselves Liberals, firstly, because they think that the Liberal party is identified with and financed by the class of industrial employers, and looks at public affairs through their eyes; and secondly because no clear and convincing definition of the Liberal attitude, or of the way in which it can lead us towards a happier order, has ever been put before them. Many of them have adopted the formulae of Socialism or of Syndicalism without very close examination, simply because these formulae seem to afford methods of reaching the better order which they desire; and also because they are advocated with force and vigour by some very able men who have realized (as Liberals have not done) the immense potency of ideas.

Attention is then called to the two wings of the Labour Party after which Professor Muir adds:

> Between these two groups stands the Liberal Party, a feeble remnant broken by the war and by the political manoeuvres which followed it, and largely exhausted by the strain of ten years of strenuous tenure of power. Yet, feeble as it is, it is the spokesman of a great tradition, the exponent of ideas which have inspired zeal and hope in the past, and which are capable, if intelligently redefined, of offering a reasonable and tenable solution of our problems in the future.

In his chapter on "Liberalism and Capitalism" Professor Muir sanely says:

> We all know what "Capital" is: it is wealth withheld from consumption, mainly in order that it may be used for the production of further wealth, as the farmer holds back part of his crop from the market in order that he may use it for seed. Every man who has bought a tool out of his savings has to that extent created capital. We are all further agreed, whatever our political opinions, that capital in this sense is indispensable for the conduct of industry. Roughly, in a complex society like ours, we have to set aside year by year about one-fifth of all the wealth we create for the purpose of keeping our industries going and expanding them. If we failed to do so we should soon be faced by ruin; just as the whole world would die of starvation if all the farmers used up all their crops instead of keeping back a part for seed. In spite of its many defects, the existing economic order has this unquestionable merit, that it has somehow secured the setting apart, year by year, of the requisite amount of capital. And no system will succeed unless it somehow succeeds in doing this.

In view of the wild claims of agitators for an industrial revolution the following plain statement of recent experiments will be interesting:

> If private ownership of capital is to be prohibited, some other means of securing the necessary capital must be found. Some men, thinking only of the capital sunk in railways and mills and so forth, and forgetting that these are always wearing out, and having to be renewed, imagine that it would be enough if the State were to confiscate all existing capital. The Bolsheviks tried this device in Russia. The result was that nobody created new capital by saving, since it was obviously futile to do so; and in the absence of new capital the whole industrial system broke down, with the consequence of wide-spread ruin and starvation, which could only be partially remedied by forced labour or slavery.

Close and clear thinking leads Professor Muir to add "in truth, the majority of Socialists recognise that even in the Socialist State capital would have to be drawn

largely from private savings, on which interest would have to be paid; and that means private ownership of capital."

In Chapter VII, Professor Muir discusses "The Socialist and Syndicalist Solutions." Those economists who have thought the matter through to the end will doubtless concur in this decision:

> If the State became the sole employer of labour, as it would be under the Socialist scheme, it would necessarily become a direct party in every controversy about wages and the conditions of labour; and it would also have complete control, without any competition, over the types of goods which the consumer could purchase, and over the prices he would have to pay. That is to say, both workers and consumers would be far too much at the mercy of the officials who would represent the State. As things are now, the State (except in "controlled" industries) stands aloof from the conflict between employers and employed, and from the conflict between producers and consumers.

It is a trite saying that what is one man's food is another man's poison—but the truth of such an assertion has never been questioned. Such a generalization may be said to hold true, according to Professor Muir, for industries, as the following quotation from the chapter on "The Principles of Liberal Industrial Policy" will show:

> Some industrial undertakings, especially in their early and experimental stages, can only be expected to thrive under the complete control of an individual enterpriser, often a capitalist who is willing to risk the total loss of his money on the chance of achieving great success. Others may be controlled and managed by the workers with hand and brain engaged in them, borrowing on the market, or supplying themselves, the capital they require. Others may be best conducted by organizations of the consumers whose interests they exist to serve. Others—well-established concerns following understood methods—may lend themselves to a variety of different experiments in the co-operation of the various factors of production, labour, management, capital, the consumers. Yet others, more especially great monopolies or public services, may be best carried on under public ownership and control, whether on the scale of the municipality or on the scale of the nation. In a free, progressive, and enterprising community we ought to contemplate and welcome an infinite variety of method. And such a variety is wholly in accord with the ideas of Liberalism, which does not believe in cut-and-dried formulae.

Professor Muir often sees the industrial situation through the eyes of an executive but he seldom, if ever, fails to recognize that there are always two sides. The case of the worker he presents in his chapter "The Problem of Unemployment." In that chapter he says:

> When a man gives his strength to the service of an industry, he has a right to expect that, so long as he works honestly, he will be sure of a decent livelihood. If he is liable to be turned off at a week's notice, without any adequate provision for his future maintenance, for no fault of his own, because of some trade-fluctuation, or possibly even because the concern in which he is employed is badly managed, it is impossible for him to think of himself as a citizen of the industry; impossible that he should not feel that he is being exploited without ruth, and that the owners of an industry in which he has no sense of partnership use him so long as they want him, and fling him aside when they don't. Under such circumstances he would be more than human if he did not often give grudging work.

On the subject of unemployment the executives have had enough—and to spare—but they should be interested in the following warning about a panacea often advocated in this country for the cure of disease:

> One of the dangers of a system of provision against unemployment organized entirely according to trades would be that it would place difficulties in the way of transfers. The workers in a decaying industry would be tempted to remain in it too long, and the burden of meeting a growing charge for unemployment would accelerate the ruin of the industry, and thus intensify the general problem of unemployment. The difficulty of adjustment between one industry and another would be further increased by the fact that, under such a system, each industry would be tempted to restrict the number of workers admitted to it, lest they should become a burden upon the industry. In the days when Poor Law relief was administered separately by each parish, the parish authorities were loth to allow any newcomers to get a "settlement" within the parish, lest they should later become burdensome to the rates.

Professor Muir does not overlook the interest of the community in industrial strife. In his chapter, "The Detailed Control of Industry and the Distribution of the Product" he says:

The claim of the brain- and hand-workers in industry to a share of control over the concerns in which they are employed rests upon wider grounds than their mere economic interests; it rests upon grounds of citizenship. But it will not lead to satisfactory results, whatever mode of organization may be adopted, unless it brings about a strengthening of the motives for the maximum production of wealth. If it has this result, the admission of the workers to an effective partnership in the control of industrial concerns will be beneficial to the community, and will therefore last and grow. If it has the opposite result, it will come to an end because it will be harmful to the community.

American executives will be interested in the concluding paragraph of the chapter on "Trusts and Cartels" because it is an English view of American conditions. This paragraph reads:

As America has suffered most from the evils of Trusts because she has encouraged their rise by a system of high protection, she has had to study and experiment in the methods of preventing these evils on a greater scale than any other country; and there is a good deal to be learned from American anti-Trust legislation. The chief aim of this legislation has been to guard against unfair competition; and unfair competition is held to mean the use of any method which excludes the rivals of the Trust from equal access to the consumer, such as the granting of rebates to customers dealing exclusively with the Trust, or the organization of boycotts, or the reduction of selling prices in defined markets for the purpose of ruining a competitor. These methods have never reached so high a pitch in this country as in America—thanks mainly to the operation of Free Trade. But they constitute a danger; and the American example shows that they can be dealt with by legislation.

Good goods are said to be done up in small packages. While generalizations are generally dangerous, the shortest chapter in the book, "The Freedom of the Worker" is possibly the most thought-provoking discussion in the volume. To illustrate:

Men are not free to do their best for themselves, or to serve the community in the production of wealth with all their strength. They are restrained not only by the defects of the existing economic system, but also (and probably in a higher degree) by restrictions which the workers have themselves devised with the object of remedying the defects of the economic order as they understand them, and which they impose upon their fellows with all the disciplinary powers that their Unions can wield.

Evidently the housing problem is as acute in this country as in England, as the following will show:

The problem of housing, and the closely related problem of improving our cities and towns and clearing out their soul-destroying slums, are today more difficult than ever, because we are now an impoverished and debt-laden people; while the urgent need of a great increase of housing accomodation, and the extreme difficulty of meeting it owing to the high cost of materials and the scarcity of qualified labour, render it futile to undertake any large projects of demolition and reconstruction.

Yet the very fact that there is so much to be done ought to encourage us to take long views, and to make sure that the work of home-making now to be undertaken is not carried out in such a way as merely to ensure the creation of new eyesores and plague-spots. We are paying heavily today for the failure of our ancestors to look far enough ahead a hundred years ago; at the beginning of what will probably be a new era of rapid construction we must not be guilty of a similar blunder. It will be indispensable that our action in this field should be guided and controlled by legislation and by the administrative activity of public bodies, national and local. At the same time it will be wrong to depend wholly upon centralised control, or upon the official action of public bodies. Every means of enlisting the aid of enlightened private effort, and of guiding it into fruitful channels without restricting its freedom for experiment, should be employed.

At a time when Charles G. Dawes is struggling so hard with the American budget, it is some encouragement to know that other countries are facing the same problems in public administration. In his chapter on "National Finance and Taxation" Professor Muir is frank to say:

Our first plain duty is the most rigid economy in national expenditure. We are no longer a rich nation; and out of our poverty we have to meet far greater calls than we ever had to meet before. We are in a situation in which a cheese-paring parsimony, both public and private, has become one of the greatest of civic virtues. Yet the habit of lavish and uncalculating expenditure, bred by the war, is hard to overcome; and perhaps by way of reaction, the whole nation has rushed into an orgy of extravagance. The habit of thrift seems for the moment to be dead; though it is only by thrift, combined with hard work,

that we can hope to emerge from our troubles. The example must be set by Government. We cannot afford to maintain a Navy, and Army, or an Air-Force larger than the minimum necessary for national safety. We cannot afford to assume new responsibilities (as in Mesopotamia) even if it can be shown that our help is badly needed; we have to be honest, and pay our debts, before we can be generous. We cannot afford to maintain a single public office not absolutely indispensable for the conduct of necessary or productive work. We cannot afford lightheartedly to undertake undefined and growing burdens such as are involved in subsidies like those on bread and on railway-traveling. We can afford these luxuries the less because it has on all grounds become indispensable for the national welfare that we should spend money generously on essential but hitherto neglected needs; on research in many fields, on education, on the prevention of unemployment, on the development of various national resources which private enterprise has disregarded. And if it be true, as we are assured, that the limit of taxation has almost been reached, then it is plain that we can find the money for these essential outlays only by drastic economies in other directions.

Neither the tired, nor the retired, business executive will find much pleasure in the perusal of "Liberalism and Industry." The thoughtful business man, however, though he may not agree oftimes with Professor Muir, will find some of the chapters worth careful study and will probably concur in the decision of *The London Economist* that "moderation, clear thinking, and capable writing are as conspicuous, as partisan heat is lacking, in its pages."

TRADE-MARK ADVERTISING AS AN INVESTMENT

By Arthur Acheson. 46 pp. The New York Evening Post

Reviewed by J. Oscar Simmons*

The author of this monograph frankly confesses that much of the material has previously appeared in the form of typewritten briefs used in soliciting business, and asserts that the arguments have secured orders from a number of the largest and the most experienced national advertisers. Can every book be put to such a test?

Success in advertising, according to Mr. Acheson, is to establish a large market for branded products and to eliminate sales cost by making the purchase of such products a habit on the part of the consumer. He mentions specifically in a number of cases, where the most valuable asset of a company is its trade-mark.

Attention is called to the fact that he believes that the average successful advertiser is unable to tell what particular element or elements in his copy brought success, because successful campaigns are so seldom analyzed.

In the case of a branded product, the wholesaler regards it as a necessity and a staple part of his stock for which there is no longer need to solicit business. This saving in sales expense increases the commercial value of the trade-mark. The author says:

> As the reduction of selling costs by advertising is usually attained by largely increasing the sales of a product, the larger output also invariably decreases all other costs, such as manufacturing costs, overhead charges, etc.
>
> In the case of a well established trade-mark where continuous and properly pitched advertising has made it such a part of the average purchaser's consciousness that it has become habitual to demand it, the frequency and naturalness of such demand upon the storekeeper has also made it customary with him to hand out such a brand when the product is asked for and no brand specified. The wholesaler has come to regard it as such a necessary and staple part of his stock that there is no longer need to solicit his business upon it. He recognizes the fact that it is distinctly to his interest to keep his stock well supplied. This is the state of standardization of brand which I call automatic sale, and which, in turn, is the outward and visible sign of capital value in trade-mark. It is this saving in sales expense, added to the profits, that gives increased capital value to trade-mark.

* Assistant Professor of Journalism, Syracuse University, Syracuse, N. Y.

Special attention is paid to the influence of repetition. Such reiterated affirmation, however, must be pleasing and truthful, if it is to be successful. The reason why a pleasing suggestion "pulls" in advertising copy is, that to be pleased is the most elemental of all human desires. "We hug pleasant memories while we haste to forget unpleasant things."

Too often the element of time is overlooked by the advertiser. The reason given why time is so essential to the successful establishment of trade-marks is that time is essential to the formation of what is called "human belief." Mr. Acheson holds that efforts to accelerate effective advertising by the introduction of startling attention-getting features in the copy will usually in the long run injure, however effective they may be in producing immediate sales. Such an assertion, however, is not a questioned fact. The first requisite of good copy is that it will attract attention—but it should do so pleasantly.

This fact is again emphasized as follows:

> Advertising that steals subconsciously and pleasantly into the knowledge of the people by steadily reiterated suggestion of a pleasing nature, produces infinitely stronger and more permanent brand-building effect than copy designed immediately to arrest attention in the hope of startling people into the trial of a new product. In the former case, numbers of people are likely to be using the product before they are aware that the advertising that they have seen has had anything to do with it. A sense of excellence and quality regarding the product has been established in their minds almost unconsciously.

The concluding thought of Mr. Acheson is that the greatest essential in the success of trade-mark advertising is the faithful vision of the man whose money is expended. He says:

> It is practically impossible to make a great success of trademark building by advertising, unless the man whose money is spent believes in advertising. Unsuccessful advertisers are, very often, those who regard advertising as a necessary evil. Advertising approached in this spirit cannot succeed in a large way. The combined talent, experience and knowledge of the advertising field would find it practically impossible to make a great success of advertising for one who regards advertising as a disagreeable expense instead of an investment. No matter how good the copy might be, no matter how efficient the sales plans, such a man will constantly interfere in a way to spoil the continuity of effort essential to the fullest success.

The book is one that most business executives could read to advantage. It is not technical in character, and contains much that is helpful for an intelligent discussion of the broader principles underlying any advertising campaign for a branded product

BETTER BUSINESS ENGLISH

By John M. Manly, Head of the Department of English at the University of Chicago, and John A. Powell of The Holtzer-Cabot Electrical Company of Chicago. 217 pp. Frederick J. Drake & Company

Reviewed by Bert Barnes *

Executives and others might well commit to memory the following decalogue of dictating with which this book opens:

1. Concentrate on what you are doing; the other thing can wait.
2. Visualize your correspondent and talk to him; don't "gas" at him.
3. Don't be a June bug; know where you are going and how to get there.
4. Don't let your reader understand what you mean; make him do so.
5. Remember you are not writing to exhibit your education or your personality, but "to bring home the bacon."
6. Don't be natural—if you have a bad nature.
7. If you have a natural gift of humor, forget it—or try it at home on the baby.
8. Don't try to make a hit with your stenographer; she knows you are bright.
9. Don't expect your stenographer to know what you intended to say.

* Editor of *The Blue Pencil*, a magazine edited and made for editors of employees' magazines.

10. If the success of your letter depends upon its being taken in just the spirit in which you wrote it, kill it and write a better one.

Too often a book is misjudged because the reader does not understand the purpose of the author. Professor Manly permits no careless slip of this kind for he says in his introduction:

This book is intended primarily for writers who wish to find immediately replies to the many puzzling questions about spelling, the uses of capitals, hyphens, and marks of punctuation, the meanings and uses of words, grammatical correctness, and the construction of sentences and paragraphs. Wherever it was possible to do so the information in the chapters on these subjects has been arranged alphabetically under words and phrases which it was believed would probably occur to the minds of writers in need of this information. This is a new plan for presenting the rules that apply to the use of capitals and punctuation marks, but it is believed that those who use the book will find it easy and practical. The plan did not seem applicable to the chapter on grammatical questions; but the arrangement there under the well-known eight parts of speech will, it is thought, be easy for anyone who has had even a grammar-school education. In all the chapters, the aim has been, not systematic completeness, but practical use.

Regardless of what might be true of other professors at the University of Chicago, there is nothing academic or pedantic in this remark by Professor Manly:

If it should seem to any reader that some of the questions treated are too simple and elementary to deserve a place in such a book, we say in our defense that we are constantly receiving letters from stenographers and business men, asking questions of the most elementary character—such as, "Should dear be capitalized in My dear Sir"?—and that we wish to be of service in questions of this sort, as well as in more difficult ones.

Some idea of the importance of correct English in business writing is clearly indicated by the fact that the Head of a Department of English in a great university like that of Chicago is willing to devote so much time to a set of business books dealing, for the most part, with the use and abuse of the English language.

The subject matter for this volume was doubtless suggested by John A. Powell of The Holtzer-Cabot Electric Company of Chicago, but the mode of treatment unquestionably came from Professor Manly.

In contents the book covers such subjects as: The Business of Writing; What is Good English; Spelling and the Hyphen; The Use of Capitals; Punctuation; Words and Their Uses; First Aid in Grammar; Sentence Structure and Paragraphing; and Technical Details of Business Letters.

The following quotation which opens the second chapter of the volume shows how liberal are the views of the authors:

"Right" and "wrong," "correct" and "incorrect," as applied to language, are terms that are often misunderstood. In the first place, nothing in language is right or wrong, in the sense in which it is right to speak the truth and wrong to steal; nothing is incorrect, in the sense in which it is incorrect to say that Columbus discovered America in 1490, or that Fulton invented the telephone, or that sugar and water, boiled together will make sulphuric acid. An error in English violates no law, human or divine, and is not a misrepresentation of ascertained fact or of the eternal principles of nature. It is simply and solely a failure to conform, in a matter of some importance, to the customs of the community.

"Better Business English" is an excellent desk companion for all those who want to "write it right."

BRIEF ANNOUNCEMENT OF NEW BOOKS

Settlement of Wage Disputes. By Herbert Feis. Macmillan Company.

The Law in Business Problems: Cases and other materials for the study of legal aspects. By Lincoln Frederick Schaub and Nathan Isaacs. Macmillan Company.

Principles of Economics. F. W. Taussig. Macmillan Company.

Costs, Merchandising Practices, Advertising and Sales in the Retail Distribution of Clothing. By Northwestern University Bureau of Business Research, Horace Secrist, Director, in co-operation with the National Association of Retail Clothiers. Prentice-Hall, Inc.

Development of Economics. By O. F. Boucke. Macmillan Company.

REVIEWS OF BUSINESS PAMPHLETS

A Study of Prices. By Edmund B. Fisher, Vice-President, Bank of Detroit, Detroit, Mich.

Frank A. Vanderlip, upon his return from abroad, remarked that this country was a nation of economic illiterates. Such an assertion will scarcely hold true if the leading banking institutions of America continue to publish their various economic reports. Several of these have already been reviewed in this department.

Edmund B. Fisher in the present pamphlet outlines clearly and succinctly the reasons leading to the advance of prices and states what is necessary to bring about their orderly decline. He also discusses the manner in which prices affect credit conditions.

According to this pamphlet the problem of prices is not a new one. An old English document states that in 1314 "Complaints to the King that the market of Oxford ran unreasonably high, so that poor scholars could hardly live, so the King sent down his Mandate to regulate this affair."

An attempt was then made to set a price schedule but, to quote from the old English document, "Things could not be purchased at these rates, for people would not bring them to the market (and that is a thing that Parliaments can not remedy), and so the King was fain to revoke the former act, and leave the people to sell as they could (for a trade will do as it can, and never be forced, one way or the other)."

Mr. Fisher hands down the composite judgment based upon the thought of authoritative speakers and writers on the subject of "What is necessary to bring about the orderly decline in prices," as follows:

1. That bank credit for legitimate business be not unduly restricted.

2. That the public writings and speeches of influential men be directed toward the upbuilding of business morale by spreading the gospel of confidence in our own economic strength, which must be supported, however, by normal production.

3. That the maintenance of a fair volume of export trade will tend to stabilize prices, and through the helpfulness it will give to the upbuilding of stricken nations, will react favorably on the United States.

4. That as much stress as possible be laid on the argument that a small profit on a normal production is better than a large profit on a curtailed output.

5. That manufacturers and merchants in a strong financial position should place reasonable orders to encourage trade during depressed periods.

6. That a consistent advertising policy is necessary to stimulate the buying public.

7. That at the present time a revision of our tax laws is necessary to normalize business and investment relations.

Mr. Fisher concludes his study of prices as follows:

A knowledge of the principles of prices is most important in credit granting, as the movements of prices, as has been pointed out, directly affect credit conditions. The inventory is usually the most important factor in the commercial statement, and a radical change in value may mean much added wealth or ultimate insolvency. A most important factor to remember in a period of deflation is that while the value of the inventory may shrink and the surplus be reduced, the cause which brings this about—the decline in prices—is also increasing the value of each individual dollar. What is apparently a reduced surplus may and probably will indicate a greater wealth than the swollen surplus that previously floated on the froth of the tossing waves of inflation.

A Cost System for Electric Cables. By Fred F. Benke. National Association of Cost Accountants, 130 West 42 Street, New York City.

One feature at the beginning of this business brochure commends itself to the reader: it is the description of the chief classes of electric cables. Such material enables the cost accounting sections to be better understood.

Production in a cable mill is usually on order and not for stock. Practically all purchase orders received are accompanied by specifications. Accounts are opened for all orders received in the "cable mill work in process ledger." The information contained in this ledger is described somewhat in detail.

One of the most interesting sections of the pamphlet is that devoted to the accounting for metal when the amount paid for metal differs from the value of metal used in setting selling prices. The author's remarks on this point are worth reproducing:

When an order is received (for taking all the orders received for the day) the company will try to purchase the metal required. Inasmuch as this purchase is made practically at the same time that the selling price is set, the purchase price of the metal in most instances will be the same as the price for metal used in setting the selling price, the latter being the market price on the date the quotation was made. In order to handle the metal transaction on the books in such a case, the proper metal accounts are charged with metal receipts at the value per pound used in setting the selling price of the orders for which the metal has been purchased. Any difference between this amount and the actual amount paid for the metal is charged or credited, as the case may be, to a metal pool account which thereby shows at the end of a given period the profit or loss made on metal transactions. For the sake of illustration, consider that orders have been received which require 50,000 pounds of copper in their manufacture. Assume that the copper price in the quotation is 15 cents, but that the 50,000 pounds purchased for this order are bought, however, for $14\frac{3}{4}$ cents per pound. The journal entries for this transaction are:

Copper	50,000 lbs.	$7500
Vender	50,000 lbs.	$7375
Metal Pool Profit and Loss		$125
Cable Mill Copper in Process	50,000 lbs.	
Copper Account	50,000 lbs.	

At the time of shipment the following entry would be made:

Cost of Sales	50,000 lbs.	$7500
Cable Mill Copper in Process	50,000 lbs.	
Copper Account		$7500

Thus the metal value is not recorded in the various work in process accounts, the latter accounts being charged and credited with weights only. By this procedure, if a shipment is made in June on an order received in January, and the price of copper has dropped from 18 cents to 13 cents, the order will be charged at the metal price it was taken at, thereby giving a cost of the order, which is comparable with the sales value.

Other points treated in the pamphlet are rolling and drawing charges, material costs other than metal, shop burden, general burden, fixed charges, cost of sales statement, abnormal or reworking charges, statistics for predetermining costs, production control data, and the cost of securing cost information.

A differentiation between shop burden, general burden, and fixed charges is made by Mr. Benke. In the section on burden predetermined costs and normal production are emphasized.

Says the author:

The establishment of what is the normal operating condition should be carefully considered by all parties concerned in the operation of each mill. In the mill under consideration, previous records warranted using as a reasonable normal operating condition, the total man hours (one shift) of the total number of men required to run the mill on a capacity basis, or 100% for one shift.

Usually about 80% of this amount is considered normal but the plant being discussed frequently works two shifts.

If the mill is operating at half time, the supervising expense, fixed charges, and general burden are charged to the mill only on the basis of normal operating conditions. In other words the mill is charged only with the expenses it actually incurs. Any excess or deficiency is charged or credited, as the case may be, to the respective unabsorbed or overabsorbed burden accounts and from there direct to the profit and loss account.

Forms used for arriving at the different burden rates are reproduced and add much of practical value.

In regard to reworking charges the writer says:

When an inquiry is received by the sales department for a quotation on a class of product which requires extreme care in its manufacture, allowances are made for this fact in quoting a price. If this business should then be secured, any reworking cost sustained is charged to the order. On all other orders, however, the cost of all stripping, reworking and releading is charged in memorandum form on the ledger sheets of those factory orders on which work is done. Close watch should be kept on all orders to see whether any particular class or classes of product are requiring excessive reworking charges.

A co-product of a cost system is the production control system. Naturally the pamphlet contains a short discussion of this subject.

The section on the cost of securing cost information is quoted in full:

> The question frequently arises as to how much it really costs to secure cost information. The expense on a twelve months' basis of securing the data as outlined is as follows: Three employees devote their time exclusively on cable mill accounting and estimating work. In addition approximately half the time of one of the comptometer operators and 20 per cent of the tabulating section's time is taken up with the work. The tabulating section consists of one operator and two assistants. The tabulating equipment consists of one tabulator, one sorter, and two punches. It should be stated that the tabulating section handles in addition to the cable mill work, the tabulating work of all other departments, including the complete tabulation of the plant orders of the maintenance department.
>
> In the cable mill cost accounting expense, stationery supplies, and supervision are included. Of the total cable mill expense exclusive of metal and material values, the accounting expense is $1\frac{4}{10}$ per cent of the total. Including the metal and material values, or in other words, taking the total cost of the cables manufactured, the cost accounting expense amounts to $\frac{4}{10}$ of one per cent.

The exchange of such information between different plants should be useful to administrative officials. Little data of this character have ever been made public in business literature—not even in the peripatetic pamphlets on industrial relations.

Capital and Labor. By John A. Ryan, D.D. Social Action Department, National Catholic Welfare Council, 1312 Massachusetts Avenue, Washington, D. C.

This pamphlet, written by a Catholic priest who is a recognized authority on the subject, sets forth the abstract principles of justice which should govern the employer and the workingman and then shows how these are "capable of fruitful application to present industrial conditions."

Starting with the proposition that capital and labor are mutually dependent, Dr. Ryan makes clear at the outset that while the interests of capital and labor are identical in a general way, they are not identical at every point of their mutual relations nor at every moment of time. It is this clear recognition of the actual state of affairs that brings treatise from mere theory down to practical issues and gives it a large part of its value for business executives concerned with industrial relations.

The author makes a strong plea for the moral element in industry and then takes up the necessity for mutual understanding between employers and their employees. He stresses the importance of some sort of contact between masters and workers, which "can be obtained only through organization and the device of representation."

The management, of course, is at no loss for representatives, and the workers may have recourse to the shop committee and the labor union. At all points the author is at pains to show not only the rights of each side, but the limits of those rights and their corresponding duties.

For instance, speaking of the unions he says:

> While the national trade union, or labor union, is still necessary for the protection of the workers, it has certain definite and considerable limitations. Chief among these is the fact that it does not adequately protect those interests which are common to employer, employee, and the general public. It is essentially a fighting organization. Its function is to defend the interests of the employee *against* the aggression or the obstinacy of the employer. Owing to its traditions and its methods, it emphasizes the idea of combat, and minimizes the idea of co-operation. It struggles for higher wages, shorter hours, and better working conditions generally, all of which are, at least to a considerable extent, contrary to the interests of the employer. Of itself, primarily, formally, the labor union is not concerned with a larger product or a better product.

On the other hand, he points out the paramount right of the worker to a decent livelihood and shows why other rights must in case of necessity give way before it:

> Suppose that the product is not large enough to satisfy all these claims; that is, living wages for all the workers, additional rewards for those who have special claims, as described above, and the prevailing rate of interest for the owners of capital. In such a case the claims of the stockholders to interest give way before the wage-claims of the active members of the concern. The stockholders have other means of livelihood than their interest-income—they have their capacity to work. Therefore, the needs which they will satisfy through the receipt of interest, are less important in the moral order, in the human order, than the needs of workers, the

needs which are dependent upon wages. If the workers are compelled to accept less than living wages in order that the stockholders may obtain the normal rate of interest, the elementary needs of the former, their need of food, clothing, and shelter, will be accounted less important than the desires of the stockholders to enjoy life's luxuries and superfluities. This is a manifestly irrational distribution of the common product among persons who are essentially equal in human dignity and in their claims to a reasonable amount of goods and opportunities which God has provided for all His children. Therefore, justice requires that the owner of capital should not receive interest until all the workers have obtained remuneration equivalent to a decent livelihood.

In discussing the matter of arousing the interest of the worker the author has some interesting things to say:

The indispensable first step toward a larger product is to make the worker more interested in his work, in its planning, its processes, and its results. His industrial position must be so modified that he will find himself in some degree a partner in the enterprise, rather than a mere executor of orders, or animated instrument of production. Inherent in every normal person is the desire to exercise some controlling power over his material environment. Every normal person possesses some directive, initiating, creative capacity. Unless this capacity receives some opportunity for expression, the wage-worker, like all other persons, remains uninterested in his task, and relatively inefficient. When the worker is enabled to exercise his directive and creative faculties, his interest is aroused and his efficiency is increased. The man who directs a business always works harder and more efficiently than his employees.

Developing this idea he expresses the following practical ideas:

"Participation in management" is, indeed, a vague phrase, and it means many different things to different persons. As we employ it here, it implies at once something less and something more than it conveys to the average man who has given the subject only passing consideration. As a rule, it does not and should not include either the commercial or the financial operations of a business. The workers are not competent nor eager to take part in the processes of buying materials, finding a market for and selling the product, borrowing money, or financing extensions of the enterprise. It is mainly in the industrial or productive department of a business that labor participation in management can become beneficial to employees and employers. On the other hand, it means something more than a share in direction of such matters as safety, sanitation, benefit funds, and welfare activities generally. In addition to these subjects, and in addition to the subjects of wages, hours, shop conditions, and shop discipline, there are such questions as the engagement, transfer, and discharge of employees, the continuous application of shop rules and working agreements, the training of apprentices, the supply of work, the introduction of new machinery, the improvement of industrial processes and organizations, industrial experiments, and scientific management.

Treating of the advantages of the shop committee Dr. Ryan answers various objections brought against it on the one hand by the employers and on the other by the unions.

His conclusion is:

Some day the relations between capital and labor may become so satisfactory that the shop committee and the larger industrial council will be the only form of organization required for the protection of the workers; but that day is still far in the future. Until it arrives, the shop committee can only supplement, not supplant, the union; and every true friend of the shop committee will frankly recognize the necessity of harmonious co-operation between the two forms of association.

Various other important points are discussed in this exceptionally sane and clear treatment of a difficult subject, among them being "Profit Sharing," "Wages, Interest, Profits," "Other Working Conditions," and "Arbitration."

Uniform Cost Accounting Methods in the Printing Industry—By W. B. Lawrence, Formerly Field Cost Accountant, United Typothetae of America, National Association of Cost Accountants, 130 West 42 Street, New York City.

In this pamphlet will be found a discussion of the uniform general and cost accounting work carried on under the supervision of the United Typothetae of America. Says its author:

Any discussion of uniform cost accounting in America is bound to take into account the extensive work that has been done along this line by the printing industry. The printers were the first manufacturers to undertake seriously the establishment of uniform methods. The two

systems which are today operated under the auspices of the United Typothetae of America — the Standard Accounting System, and the Standard Cost Finding System for Printers—are based upon more than ten years of practical experience.

Before the technique of these two systems is discussed, the author gives this resumé of their origin and development:

Two books of original entry, four ledgers, and eight accessory records are used in the Standard Accounting System. The books of original entry are the combined cash journal and purchase register, and the sales register. The former is used because of the labor-saving feature mentioned below and its adaptability to either a large or small plant. However, the cash book, journal, and voucher record may be maintained as separate books if the entries to be made in them are sufficiently numerous.

The ledgers of the system are the purchase, sales, factory, and general, respectively. The purpose of each is indicated in a general way by its title. The eight accessory records referred to above are the trial balance, abstracts of subsidiary ledgers, financial statements, order book, summary of sales for the year, schedule of fixed charges, summary of department costs, and individual job summary. The latter two, which are summarizing records, provide the means of interlocking the Standard Accounting System with the Standard Cost Finding System.

Of these records, the combined cash journal and purchase register, sales register, general ledger and factory ledger, and accessory records are discussed somewhat in detail. Mr. Lawrence then adds:

Some interesting problems arose in designing a uniform cost finding system for the printing industry. Printing plants have a variety of departments which range in complexity from those in which simple handwork is done to those which have expensive automatic or semiautomatic machines. Some departments operate almost continuously, while others, though essential, operate only intermittently. The kind of labor also varies, with the result that consideration must be given to cases where high-priced workmen operate low-priced machines; to cases where low-priced workmen operate high-priced machines; and to cases where there are various combinations between these two extremes, including piece workers and day workers on hand operations. Furthermore, the printing business is seasonal.

Production may be high or low in different departments at the same time. The work handled is of a wide variety, two orders seldom being alike. This condition tends to develop specialization. Some firms handle a general line of printing, while others handle only a single class of printing, as labels, show printing, and so on. Some firms handle all of the work, doing their own engraving, electrotyping, and binding, while others have this work done on the outside. Many concerns do only one class of work, such as binding or electrotyping. However, there is a close similarity in the general nature of operations and in the equipment and classes of labor required in those plants which do either general or specialty printing, even though the kind of work done appears to be different.

Consequently, it is apparent that the printing business is the specific order type and costs are necessarily calculated by the job cost method. However, at the same time, operation costs are required if intelligent comparisons are to be made between plants specializing in kindred lines, and if a close control is to be exercised over departmental costs. The variety of departments and the differences in operating conditions between departments requires a very exact system of departmentalization.

In devising a uniform cost finding system under such conditions it is necessary to go beyond mere manufacturing costs and to provide for distributing, selling, and general expenses over production. Otherwise, comparisons of selling cost and general cost can not be secured. To present only manufacturing costs would defeat one of the purposes of a uniform cost system, i.e., to eliminate ignorant competition and price cutting by showing what it actually costs to sell the finished product as well as what it costs to make it.

It is apparent that the development of a uniform cost finding system to meet such conditions is a difficult task, but nevertheless the system originally devised by the American Printers' Cost Commission is being used by a constantly increasing number of printers and it has been found necessary to make only minor changes in the system.

The acid test of the efficacy of a system for cost accounting is the wideness of its use. On this point the author thus puts special emphasis:

The great increase in the use of the Standard Cost Finding System may be judged from the increase in the cost figures shown by the annual composite cost statements published by the United Typothetae of America. Each year the organization secures from its members, who operate the Standard Cost Finding System, copies of their annual cost statements. These

are combined in one composite statement which represents in a very complete manner the cost conditions prevailing throughout the industry. The extent to which the Standard Cost Finding System has been adopted throughout the printing industry is indicated by the fact that the total operating costs shown on these statements have increased from $1,604,241.64 in 1913 to $19,813,571.03 in 1918, and to $45,455,953.32 in 1920.

The Standard Cost Finding System is based on a set of twenty-five principles. The system is designed to give the cost of an hour's work in the various departments the cost of any piece of work produced, and detailed comparative information in regard to the various elements entering into the costs.

The basic principles of the system are: (1) the standard of production is the productive hour, the man hour being the basis for hand labor and the machine hour being the basis when machines are the producing unit; (2) the standard hour cost is the gross cost (labor plus overhead) exclusive of stock handling and selling; (3) the standard hour costs are found by dividing the total cost of each department, including distributed general factory expense, by the number of productive hours in the department; (4) departments are subdivided into production centers, so that hand labor is kept separate from machine work, and machines of like investment and output are classed as like production centers; (5) monthly costs are ascertained and an average or standard cost established covering the preceding twelve-month period, which is used in charging current cost to production; (6) standard rates for depreciation and obsolescence of machinery and type, based upon experience, are used; (7) suitable rental is charged on owned buildings to permit of comparisons between different plants whether owned or rented; (8) interest on plant investment at depreciated value is charged to cost to allow comparison between machines of different types which can handle the same work, the interest charge being returned to income when the annual loss and gain statement is prepared; and (9) interest (financial) and discount, donations and charity items do not enter into the costs.

One of the first steps in using this system is to divide the printing plant into departments. The principle underlying the departmentalization is that handwork is to be kept separate from machine work, and machines dissimilar, as to investment or output, are kept separate.

The essential forms necessary to operate the Standard Cost Finding System are explained, such as the individual job, summary, instruction envelope, daily reports and records, weekly pay-roll sheet, monthly individual pay-roll record, monthly report of hand departments, monthly record of machine departments, monthly summary of department costs, and yearly record of costs and production.

Certain features of the Standard Cost Finding System receive special comment in the pamphlet such as stock handling expense, the "irrepressible" question of interest on investment as a cost, cumulative twelve-month average cost rates, calculation of the cost to make and sell an article, and provision for special conditions such as unused machines.

Under the Standard Cost Finding System stock handling expense is usually collected as a separate cost item, and distributed over the material cost as a percentage of the cost of material used. The cost of different classes of material varies. Sometimes the distribution of stock handling expense is made on the basis of the number of pounds of stock handled.

The author continues:

> The hourly cost rates used to charge costs to production and to determine selling prices are based on the averages for the preceding twelve-month period. This is one of the most valuable features of the Standard Cost Finding System. The printing business, as stated before, is seasonal, with two periods of peak production in most plants. The cumulative average for the preceding twelve months covers all production conditions, so that the cost rates represent a normal set of rates for the period upon which prices may be safely based. When costs rise and fall in a given period, the cumulative rate spreads the rise or fall over a longer period so that excessive variations in cost during short periods are not a source of trouble, as is the case when some machine rate methods are used.
>
> The cumulative averages also make possible the compilation of average rates for a locality or for the entire industry which ignore immaterial variations and permit useful comparisons because they are based on a sufficient period to represent the stable operating conditions covered by the compilation. At the same time, the monthly rates by their variations indicate any changes that are occurring and thus serve as a warning of fluctuations that may have a harmful effect.
>
> Another valuable feature of the cumulative average rates is that this method in effect is an

application of the standard or normal cost rates desired by many cost accountants.

The pamphlet has an appendix prepared by the Research Department of the National Association of Cost Accountants, which is a summary of the three chief publications of the United Typothetae of America, namely, the Treatise on the Standard Accounting System for Printers Interlocking with the Standard Cost Finding System, The Standard Cost Finding System, and the "Demonstration Book."

A number of footnotes refer to sections of these publications which bear on the points discussed in this business pamphlet.

Principles and Practices in the Valuation of Industrial Properties. The Standard Appraisal Company, New York City.

The application of common sense and judgment to the valuation of industrial properties might be the text of this booklet. The judgment of the appraiser, based on sound fundamental principles, is set above theoretical considerations and intricate formulae. Several of the points to be considered are then very briefly outlined.

The discussion of "Natural Depreciation" from loss of value due to physical or chemical changes in plant units, or from accident, stresses the point that theory will not answer here, and that there are no set rules. It is urged that though an estimate of depreciation is at best an approximation, it is nearest truth when based upon condition, type, and service, not age, giving full credit for upkeep and maintenance. It is also noted that though some plants are practically as good as new on account of careful maintenance, yet it is "well-nigh impossible to keep any property up to the standard in value."

Functional depreciation includes obsolescence which is loss in value due to changes or advances in the art which renders an apparatus or other property uneconomical as compared with new types and developments. Inadequacy is the term for noting increased demands upon plant-units rendering them too small or too light for the increased service necessary. Both are regarded as very important factors in a valuation.

Good-will is an intangible value that exists, according to the courts, only where there is competition.

The following explains itself:

A method adopted by the Standard Appraisal Company in the appraisal of "good-will" is to express value in the terms of the net income produced by the property in an agreed number of years. That is, after appraising the physical plant, the value of the "good-will" will be the sum of the net income earned by the property for say, three consecutive years immediately preceding the appraisal.

Other sections of this business brochure deal with such subjects as "Insurable Value," "Appreciation," which is the increase in worth expressed in terms of money, and is added to the valuation just as depreciation is deducted, "Inclusion of Overhead Charges," or a percentage added to the cost to reproduce new for such items as engineering, taxes, interest during construction, etc., and "Element of Time," which is a factor necessary in any reproduction estimate.

The Automobile Industry and Its Future. By Leonard P. Ayres, Vice-President, The Cleveland Trust Company, Cleveland, Ohio.

Executives who read the contribution to *Administration* for August on "Price Changes and Business Prospects" by Leonard P. Ayres will want to read this pamphlet from his pen—especially if they are interested in the automobile industry.

The pamphlet has more general interest than its title would seem to imply because the automobile industry is so closely linked with other industries. When the manufacturers of automobiles curtailed their production recently, it was found that they were the heaviest purchasers of plate glass in America.

Everything that Colonel Ayres writes has the touch of accuracy. His fondness for statistics is bound to show itself in the tables, charts, and graphs. This particular pamphlet is especially well illustrated in this respect.

One table shows the number of motor cars registered in each state and in the various geographic divisions each year from 1912 to 1920. The fundamental table in the pamphlet is that which shows the pro-

duction and use of automobiles in the United States since the beginning of the industry in 1895. In this table automobiles are classified as Ford cars and other cars.

Of general interest is the table showing the people per car in use each year from 1912 to 1920. Still more specific is the table showing the cars in use each year for every hundred native white men of voting age.

The pamphlet concludes with a table and diagram showing the price changes in seven high-priced cars, five low-priced cars and thirteen medium-priced cars during nine years. Among the interesting facts brought out by this pamphlet are:

1. Since the beginning of the automobile industry in America, 25 years ago, the number of cars manufactured up to the beginning of 1921 has been about 11,775,000, of which more than 700,000 have been exported. About 9,000,000 are in use, and 2,000,000 have been worn out, destroyed, or abandoned.

2. The average term of service has been about six seasons.

3. By the end of 1920 there was one car in use for each 12 people in the population.

4. The theoretical number of possible purchasers of motor vehicles seems to be limited to about 20,000,000. This is about the number of white, native-born men above the age of 21. It is also about the number of white American families. It is also about the number of persons earning money whose occupations are such as to make it appear possible that they might become motor car owners.

5. At the end of 1920 there were about 42 cars in use for each 100 native white men of voting age. The number varied in different parts of the country from about 22 cars per 100 men in the East South Central states to 60 cars per 100 men in the Pacific states.

6. It seems impossible to compute any saturation point for the industry because the number of cars demanded will apparently depend for many years to come on the general prosperity of the country.

7. It appears certain that for some years to come new users of automobiles will largely be people of limited means who will purchase inexpensive cars.

8. Since 1916 the increases in the annual output of automobiles have largely been accounted for by the expanding output of Ford cars and of other relatively inexpensive makes.

9. Up to the present time the replacement market has never exceeded 500,000 cars in a year, but there is every prospect that it will shortly amount to at least 1,500,000 cars per year.

10. Present productive capacity of the automobile industry is more than 1,000,000 cars per year greater than would be required to maintain the existing use of machines in a constant status.

11. Unless exports of cars increase enormously it appears that the present productive capacity of the industry would be sufficient nearly to double the number of cars in use within the next few years. It appears extremely doubtful if foreign or domestic markets can be sufficiently expanded to take care of this capacity, and if they could it seems probable that some motive power other than gasoline would have to be developed to propel the cars.

12. It seems probable that extensive price adjustments will be made in the next few years, as the industry, with its great capacity, competes for purchasers among people and countries whose buying power has recently been sharply curtailed.

Beyond doubt the chief iuterest of executives in this pamphlet will be due to the fact that the automobile industry is so often the business barometer which records the atmospheric conditions of the business world to all industries.

This bulletin, which is the second economic report of The Cleveland Trust Company, may be obtained gratis upon application to that company.

The Causes of High Building Costs in Cleveland. Report of the Building Costs Investigation Committee of the Cleveland Chamber of Commerce, Cleveland, Ohio.

The Cleveland Chamber of Commerce has inquired into the causes of high building costs in Cleveland during the summer of 1920 and submits the report published in the pamphlet under the above title.

The conventional method of investigation was used—the committee securing data and opinions relating to local building costs from many building contractors, building trades, union officials and material dealers, through committee conferences, correspondence, or personal interviews. It also obtained information as to building labor and material costs elsewhere through the co-operation of organizations in several other cities.

The investigation is divided into two major divisions: (1) Building labor in relation

to building costs; (2) building materials in relation to building costs.

The Collective Labor Contract. By Theodore M. Ave-Lallemant, New York City, N. Y.

This pamphlet is a reprint of an article published in *The American Economic Review* for June, 1921. The edition is doubtless limited, but while it lasts Mr. Ave-Lallemant will be glad to send executives a complimentary copy.

Something of the scope of this pamphlet may be obtained from the following quotation:

> It will easily be seen, now, where mere "collective bargaining" differs from the action of the members within the collaborating fellowship. Collective bargaining seeks no more than to stipulate the terms of individual contracts of employment with respect to the exchange of what shall be regarded as fair equivalents. Fair equivalence under a time wage may be achieved, but to say that it can be determined by contract is an absurdity. This is the real explanation of the failure of collective bargaining to find universal application. Pass from time-wage to payment by results and apply collective bargaining with respect to the terms of the bargain, and you have set your foot upon the road that leads to collective contract. The intangible value of co-operation remains, and it is not subject to contract and will be rendered only to a fellowship. We may contract with an alien; we give our loyalty only to our own, our fellows. But—and that is the point for employers to see—the contracting group, which can command the loyalty of its fellows, can afford to give better value when it makes a contract than the equivalent of what would be the sum of all the values given by its members, severally, were they to make individual contracts in severalty. It can afford to give better value because it can put into play, can release because it can hold, the loyalties of men. It can afford to give better value because it can top the "vital reserves" of men so well described by William James in his address on "The Energies of Men."

The pamphlet is especially valuable for its rich reference to works on the subject published in foreign languages.

Bond Tables. Published by Harris, Forbes and Company, New York City.

The advance of interest rates on bonds to 8 per cent in the last few years has compelled the enlargement of bond tables used in computing yields and security values. One of the latest tables thus extended is that just issued by the well-known New York bond house of Harris, Forbes and Company for distribution among their friends. The present is the sixth edition of the compilation, the first having been published in 1899.

The volume is in the form of a handy pocket edition and has a neat, flexible leather binding. The tables are broad enough to permit the computation of the present values of, and yields in, bonds bearing interest from 3½ per cent to 8 per cent and running from one to one hundred years. It covers bonds maturing within 25 years which are purchased at prices to yield from 3 per cent to 10 per cent, payable semiannually, and bonds maturing between 25 and 100 years which are purchased at prices to yield from 3 per cent to 8 per cent, also payable semiannually.

The uninitiated in bond values are instructed in the use of the tables by a number of simple examples.

Investors will find the volume very serviceable, particularly Liberty bond holders, as their needs were especially borne in mind in the construction of the tables.

Bread Facts. The Research Products Departments, Ward Baking Company, New York City.

Obviously, such a business brochure as this should be of interest to the wives of executives. It is not mentioned here, however, for that reason. Executives will find it an excellent blue-print for reports by research departments.

Seldom are the results of the research department presented in so attractive a form as they are in "Bread Facts." For such presentation full credit should be given to R. M. Allen, Director of the Research Department and to Charles Hoffman, Chief Chemist of The Ward Baking Company.

The booklet has a practical value in the library of any industrial plant which runs a lunchroom or cafeteria for its employees. It may be obtained gratis upon application to the Ward Baking Company.

CHRONICLE AND COMMENT

INSIGNIA FOR WORKERS

When soldiers distinguished themselves in the late war they were publicly decorated with the croix de guerre, the medaille militaire, the Distinguished Service Order, the Victoria Cross, or some similar badge of honor. None of these decorations had any pecuniary or other than sentimental value. They were, and were intended to be, a public recognition by the Nation of meritorious service. The bestowal was in public in order that the recipient should have the widest recognition and also in order that his comrades might be inspired to emulate his deeds. The decoration was intended to be worn so that all the world might see how his government appreciated and honored those who served it well.

Now these men so honored above their fellows were citizens called temporarily from their daily tasks to the service of their country. In civil life they were not on the same level of mediocrity with all their fellow workers any more than they were in the army. Despite the pernicious doctrine inculcated by labor unions all men are not equal. In every craft are a few more skilled, more capable and conscientious than others. Unless they chance to be on piecework these exceptional workmen have no opportunity to earn any more money than the ordinary employee, and never do they have possibility of gaining other recognition for good work.

History teaches that the titles and other honors conferred by royalty as rewards for faithful service, or marks of special favor, have always been at least as eagerly sought as wealth.

Why should not special honors in industrial vocations be as keenly appreciated as medals won in the avocation of war? Why should not the workman be as much entitled to public recognition of exceptional achievement as men in other walks of life are deemed deserving of knighthood, or the Order of the Garter, or the ribbon of the Legion of Honor? And why should not such recognition be as much an inspiration and an incentive in the one case as in the other? Why should not the thing which has been found to be sauce for the government goose be equally good sauce for the industrial gander?

Illuminating answers to these questions may be found in the "Order of the Red Spot," an institution peculiar to the Erie Railroad.

F. D. Underwood is conceded to have done an exceptional bit of constructive work in the years he has been president of the Erie Railroad. Perhaps it would be more correct to say reconstructive work, because that is more difficult than construction and hence deserving of greater honor. At all events the Erie has "come back" under Underwood's administration.

One of the qualities which have contributed to his success has been an exceptionally keen and sympathetic understanding of human nature. No other great railroad system with which I am familiar, and I have traveled over a number of them, talking with officers and men, using eyes and ears in an endeavor to arrive at an understanding of the spirit behind their organizations, has a more loyal force than has the Erie, none exhibits more vim and verve, or "pep," to speak colloquially.

In numberless ways President Underwood has exemplified his understanding of human nature; but for the present only one of these ways need be considered.

Locomotive engineers have it in their power to influence very materially the earnings of the railroads on which they are employed. Since the firemen are directly under their control they can collectively waste a great many thousands of dollars worth of coal in the course of the year or they can save equally large sums by intelligent firing and by handling their engines skilfully, for fuel is a very important item in the railroad expense account. As they personally oil their engines they control the expense of lubrication. As they have charge of the locomotives the cost of maintenance to a very large degree is dependent upon the skill and judgment with which they fulfil their trust. They can handle their trains skilfully and with a minimum of

damage, or they can slam things around recklessly pulling out drawbars and otherwise damaging equipment, thus running up heavy repair bills and damaging freight enough to bankrupt the road in paying freight loss and damage claims. And they can so handle their trains as to cause delay and demoralization of the service or they can get over the road on time, which is an important factor in promoting efficiency and economy.

It will be seen, therefore, that any method, scheme, or device which will constitute an unusual incentive for engine men to exert themselves to the utmost, must be of the highest importance to the management. Besides, it does seem as if the engineer who does his full share in helping his road earn dividends should be awarded some sort of recognition over his less capable or less conscientious fellows who make frequent material contributions toward a deficit. It cannot be done through the pay-roll because earnings are carefully defined and restricted in a wordy agreement between the Brotherhood of Locomotive Engineers and the Company; it cannot be done by promotion to a more desirable run because promotion is strictly according to seniority, also incorporated in the agreements to insure their "rights" to the just and the unjust, the righteous and the publicans and sinners.

The Erie alone of all the railroads has cut the Gordian knot. When an Erie engineer and his fireman perform their duties in an exceptionally capable way for a given period their services are recognized in the same way that King George recognizes an unusual service to the British Empire: namely, by bestowing a decoration. Rather, the Underwood way is an improvement upon that of King George, for whereas the jewel of the Order of the Garter can be worn by its proud possessor only on state occasions, where it can be seen by the favored few, the insignia of the Order of the Red Spot is worn, not upon the breast, but upon the front of the smokebox of the locomotive run by the fortunate winner, and it is worn day and night and every day. The decoration consists in painting the number plate on the front end a vivid red. This large round disc, framed against the sable background of the smokebox is so conspicuous that it fairly dazzles the eyes of all who chance to be within sight of the Erie right of way.

The "Red Spot" proclaims to all the world that here is a locomotive handled by men who understand their business and attend to it. As President Underwood says in his autograph letter accompanying this article it is intended as a public acknowledgment on the part of the Erie Railroad Company of faithful service duly rendered. As a still further expression of appreciation on the part of the company a list, giving engine number and names of engineers and firemen members of the Order of the Red Spot on each division is published monthly in the Erie Railroad Magazine, which is distributed to all officers and employees. For example, the list for June, 1921, contained the names of 36 engineers and firemen on the New York Division.

Eligibility to membership in the Order of the Red Spot was defined in a set of five rules promulgated in November, 1913, although the Order had then been in existence for some time.

First of all requirements is the ability to show the best performance in the operation of a locomotive, both as to regulating the work of the fireman as well as performing successfully all the duties of a locomotive engineer, so as to get the greatest efficiency at the lowest cost.

Next, cleanliness is to be considered an essential factor, a point worthy of special attention because on at least one of the great trunk lines cleanliness is regarded of no consequence whatever. A locomotive is allowed to retain all the dirt, cinders, and grease it can accumulate from month to month, no attempt whatever being made to clean it until it is in actual peril of collapse under its weight of dirt. The service record of the engineer is also an essential factor, and such records are carefully kept on a card index from the first day a man enters the employ of a railroad until his death or retirement. His record must be without an engine failure for which he may be held responsible for a period of at least six months.

As a third condition of eligibility engineers are required to make a study of the

four leading economies over which they exercise full control; namely, fuel economy, 100 per cent; lubricating materials, 100 per cent; economies in the use of tools and other supplies; maintenance and shop cost of locomotives, all of which may be very materially affected by the manner in which an engineer performs the various details of his duties.

Membership is elected and proclaimed on the first day of each month by a committee composed of a master mechanic, one road foreman of engines or supervisor of locomotive operation, one trainmaster, chief dispatcher, and superintendent.

Certain privileges pertain to the Order of the Red Spot. Thus engineers or firemen in charge of a Red Spot locomotive becoming amenable to discipline receive these benefits: (1) Record—no benefit; (2) suspension, reduced one-half; (3) dismissal, membership is to be given due consideration.

Membership in the Order of the Red Spot is not the only way in which the Erie publicly acknowledges exceptional service. For example, in January 1911, the Erie gave as a birthday present to Alexander Larkin on his sixty-eighth anniversary the locomotive he drove on the Pittsburgh flyer between Cleveland and Youngstown, Ohio. Larkin was an exceptionally capable engineer without a flaw in his record of 49 years of continuous service. But as Aleck could not raise money on the locomotive, nor even take the family out for a ride on it on Sunday afternoons he told the company it might keep its old locomotive when he was retired under the age limit.

From this incident grew the custom referred to by President Underwood in his letter of painting the names of engineers on the cabs of locomotives they had handled with exceptional ability. Matt Shea was such an unusually capable engineer that the Erie wanted him to have his name on the biggest locomotive it possessed; so it was painted on the cab of the first Mallet purchased for pusher service on the Susquehanna Division and promptly yclept by the irreverent "Big Agnes."

Harvey Springstead who pulls a passenger train between Jersey City and Suffern is another of the few engineers selected for the special distinction of having his name on his engine. In speaking of Springstead an officer said:

"Harvey is a giant with a strong, clear eye, who is always on time, day in and day out. His record is clean. He is a man among men, beloved by everybody, and a credit to humanity."

When officers talk that way about the men under their command is it any wonder the corporation fortunate enough to have their services has built up an enviable reputation?

The following letter from President Underwood may well conclude this comment:

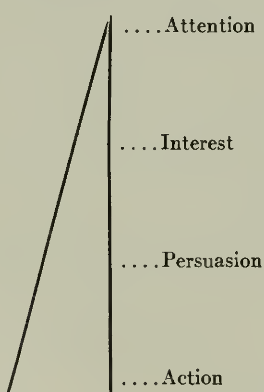
> The "Order of the Red Spot" was started on the Erie Railroad perhaps ten years ago, and I am not sure who was the father of it. I make no claim in that direction. However, it is a good thing.
>
> Generally speaking it is a public acknowledgment on the part of the company of faithful service. It is fitting that any man who has done extraordinarily well in anything should be credited. While such men had a record on the books of the company, the public knew nothing of it, and it was with the idea of giving them public recognition that the "Order of the Red Spot" was started.
>
> The conditions carrying membership in the "Order" are, a certain term of freedom from accidents that could have been prevented by any action or forethought on the part of the engineer or fireman, the handling of trains in such a manner as to cause the least shock and damage, and the general condition of the engine placed in their charge.
>
> In addition, at the end of a prescribed term, when the conditions imposed have been fully met, the engineer may carry his name on any engine he is in charge of. The engine may also be decorated to suit the individual taste of the engineer and fireman.
>
> These decorations and the carrying of the red spot indicate to the public and employees that a superfine job is being done by that engine, by reason of which the engine crew get public recognition.
>
> The whole plan was a reform, but unlike many reforms if it does no good (and it has done good) it can do no harm. That is reason enough for its continuance.
>
> The principles of the "Order" bring about in a perfectly rational and impartial way a better feeling between the men and their officers.
>
> Yours truly,
>
> (Signed) F. D. UNDERWOOD,
>
> *President of the Erie Railroad Company.*

BUILDING BUSINESS LETTERS

As sort of collateral reading for the article on business correspondence by L. C. Wilsey and for the review of "Better Business English" published in this issue of *Administration* the following chat about the building better business letters is reprinted from *Chat*, the house organ of the Aetna Life Insurance Company of Hartford, Conn.

A little diagram, reproduced with this article, in the form of a "wedge," shows the manner by which some correspondents build their letters.

While this method applies more specifically to the preparation of sales letters, collection letters, form letters, and special letters—rather than to routine correspondence, the features outlined, as a planned effort to get the best response, can be inculcated with profit into all letter writing. The features that build a good letter are worth studying for the knowledge alone.



The first requisite of a resultful letter, as explained in the "wedge" diagram, is to gain attention. Your letter, to be read, must first win attention. This can be accomplished through an interrogative sentence, a statement that challenges attention, a quotation, or some human remark. The opening does not have to be freaky or startling. But to insure the message getting over it must have attraction.

Once the reader's attention has been gained, it must be held and perpetuated through interest. Following the attention gained, your letter must arouse the interest of the reader through the skilful presentation of interesting facts, statements, or reasoning.

After you have succeeded in winning the reader's attention, your letter, to be successful, must then persuade action. Through words which will show how your message applies to the reader, persuasion must be introduced. And then as a final effort, after you have persuaded your reader in your interest, *action* must be introduced. By following these fundamentals a proper letter can be built.

As an example of how a good letter can be constructed along this line, attention is directed to the following sales letter, which has been successfully used by Accident and Health Agents:

Dear Sir:

How often do you hear of a man who has "outgrown his position" or who has "outgrown his quarters" or his home or something else?

Constantly!

Each passing year generally finds every one of us outgrowing something.

Judging from the instructions received from our old friends to increase the size of their policies we are inclined to believe that many have outgrown their protection. Added responsibilities, maturing families, increased income and extended activities have found many with inadequate protection.

Does your present policy really provide you with the financial protection you should have? To find this out by experience is more costly than the small added premium necessary to secure a broader and larger policy.

To delay investigation in this direction may place the burden on your family or your business. We will be glad to honestly counsel you as to whether your present protection is entirely adequate for your needs.

May we have that opportunity?

Just check the card enclosed and mail it before sundown.

Yours for reasonable protection,

Ætna correspondents having occasion to prepare form letters or letters designed to win special response, can do well to follow the suggestions made clear in the diagram reproduced. The letter writing principles so brought out are also recommended for consideration in planning mere routine letters, as the plan outlined is capable of producing very good results.

INDUSTRIAL RELATIONS

The annual convention of the Industrial Relations Association of America will be held at the Waldorf-Astoria, Fifth Avenue and Thirty-fourth Street, New York City, Tuesday, Wednesday, Thursday and Friday, November 1, 2, 3 and 4, 1921. The fourth and last day session will be a joint meeting with the Academy of Political Science of New York at the Astor, Broadway and Forty-fourth Street.

The dates of the convention were first fixed as November 8, 9, 10, and 11 but the calling of the Disarmament Conference in Washington for the week of November 7 made it advisable to change the dates to

the preceding week in order that certain of the Cabinet officers might be present.

It is proposed to present a program covering the things most vital at the present time to the successful administration of industrial relations and its kindred work. Practical men will talk on the practical side of industrial relations; for instance, at the get-together dinner on the evening of November 1, six representatives of industry will tell of the most outstanding thing that has come to their attention in their particular company during the last year. So on through the entire program—no theory but plain hard facts.

UNEMPLOYMENT

During, or immediately after the Roosevelt panic of 1907, William H. Taft, then President of the United States made a speech at Cooper Union, New York City, in the course of which he was asked by a worker in the audience what a penniless man, unable to get a job should do. His succinct but illuminating reply was, "God knows, I don't." No other comment was made.

The editorial pages of the daily press in the leading cities of the United States are filled with chronicle and comment about unemployment. The news pages of the same papers tell how jobless men are put up at auction in Boston, how the Labor Day parade of New York was omitted on account of the expense, and how statistics indicate numberless smokeless chimneys among American industrial plants. Especially in the foreground are the statistics about industries idle because of lack of export trade.

Industrial idleness is being put squarely up to the present administration at Washington in the hope that some relief may be found. It is to be questioned whether President Harding can utter any more illuminating reply than that which was made by Taft.

Social agencies are doing what they can, but for the most part they are trying to relieve symptoms rather than to eradicate the disease.

In commenting on this phase of the subject, *The Freeman* says:

> Measures of relief, soup-houses, bread-lines, unemployment-insurance, and so forth—these all are like trying to cure appendicitis with doses of Squibb's mixture, which can not be done, because Squibb's mixture is not meant to cure appendicitis but to cure belly-ache, which feels something like appendicitis, but is really different. If a patient with appendicitis refuses appropriate treatment and insists on dosing himself with Squibb's mixture, there is probably nothing to be done but to let him have his way.

Ernest G. Draper, President of The American Creosoting Company, and Member of the Committee on Industrial Relations of the New Jersey State Chamber of Commerce, outlined somewhat recently in an article in *The New York Times* ways to reduce unemployment. He mentioned several industrial concerns which had attempted to solve the problem of unemployment and made special reference to the efforts of The Dennison Manufacturing Company at Framingham, Mass. He quoted a recent statement made by the personnel department of that company to show how seriously and intelligently the problem there is being met:

> At the plant of the Dennison Manufacturing Company a marked reduction of seasonal employment has been effected by the application of certain clearly conceived principles. These principles were not put at once into sudden and complete operation, but were given a practical tryout, and were extended first in one direction and then in another, as conditions made possible. In the nature of things, any very considerable reduction must be a matter of gradual development. It is indeed going on here today, with the goal far ahead of present attainment; but results so tangible have been secured that the means through which they have been achieved are no longer untested. The five principles applied include:
>
> 1. Reduction of seasonal orders by getting customers to order at least a minimum amount, well in advance of the season.
> 2. The increase of the proportion of non-seasonal orders with a long delivery time.
> 3. The planning of all stock items more than a year in advance.
> 4. The planning of interdepartmental needs well in advance.
> 5. The building up of out-of-season items and the varying of our lines so as to balance one demand against another.
>
> Besides these methods of decreasing the pressure of seasonal demands, and evening out the

inequalities, we can meet seasonal employment by conforming ourselves somewhat to it. We can balance the decrease in work of one department against the surplus of another. We can transfer operatives not needed in one line to another where there is work on hand. In doing so we make it a rule to transfer our operatives to the same off-season work each time, so that they will develop proficiency in these off-season trades.

He then added:

Some of the same expedients have been adopted by the Hills Brothers Company, importers and packers of dates. Originally the demand for dates was confined to the fall and early winter, and particularly to the holiday season. By judicious advertising as well as sales effort the season for eating dates has been lengthened so that now dates are considered appetizing (as they should be) from September to June. Even so it is inevitable that a peak of demand will exist in the early fall. To meet this demand a cold storage warehouse was erected into which is placed the daily production. Plans are so made that packing these dates continues month in and month out at a comparatively even rate, but, as sales fall off in the summer, a surplus is built up and held in the cold storage warehouse, ready for instant release when the fall demand becomes insistent.

As a result of this system, the regularization of employment has been remarkable. The whole factory morale has been strengthened by the avoidance of hiring and firing wrenches which were so upsetting under the previous conditions.

In a review of "Industrial Government" published in *Administration* last month regret was expressed that this book by Professor Commons and other members of the Department of Economics at the University of Wisconsin, did not discuss more in detail the $100,000 set aside as a starter for unemployment insurance.

The problem is well stated in the following letter which *Administration* has received from Henry S. Dennison, the President of the company:

Dear Mr. Lee:

It is true we have a fund set aside for relief during times of unemployment and have experimented a little with it since last November, but we regard this as a bit of laboratory work only, the results of which are as yet unknown. It is certain that an individual concern undertaking such a proposition can only make a very slight dent in the whole situation and it is almost certain that we could hardly expect a sufficient number of individual concerns to undertake such a job. The direction of importance in the matter of unemployment relief, it seems to me, lies in the possible development of mutual insurance companies, formed at first within related trades to furnish for the employees in their plants some relief of this sort.

I want to add, however, that a much more important matter than a fund for the relief of unemployment is the job of educating the public mind to the fact that business has run in cycles which can be softened by foresight. Every little bit of work done in this direction is going to prevent a bit of unemployment rather than doling out relief for it.

Yours very truly,
(Signed) Henry S. Dennison.

WHEN PROFITS FALL OFF

Editor of *Administration:*

In the September issue of *Administration*, Stephen Gilman made a critical review of my article published in the June issue under the title of "When Profits Fall Off."

While Mr. Gilman spoke in a highly appreciative way of my article, and gave me credit for presenting the proposed statement in a technically correct form he took exception from four different angles to my method of demonstrating the very important features connected with the subject, to which I take the liberty of making answers, as follows:

1. His selection of one year as a "focal year" without sufficient comment or explanation, resulting in the possibility of a false understanding by the average reader.

When making profit and loss comparisons, it is customary to take the most profitable year of a group as the base, and then show the flutuations of the other years as compared to that base, thus making it the "focal point."

2. His averaging of the figures for the two subsequent years, which appears to obscure the actual facts.

It is axiomatic that the "laws of average" under certain conditions when properly applied (as was done on the case under review) produces results which are indisputable facts.

3. His use of the net sales for the focal year as a basis for percentage calculations of subsequent years.

This furnishes figures which, while perhaps technically correct, do not appear to harmonize with what may be termed "executive psychology."

In the statement under discussion, there was a deflation in sales for the average year of 5.67 per cent of those of the focal year; and a like effect of a lesser percentage in the cost of sales and expenses. Since the net sales is the point against which all costs and expenses are applied to determine gross and net profits or losses, should the cost and expenses show a decrease in percentage under that of the percentage of decrease in sales, it is obvious that the cause for the "fall off" in profits is in the costs or expenses, so we go into the detail statements of comparison to locate the reason for the condition shown.

4. His failure to comment upon and distinguish between the various classes of expense with reference to their fluctuating or non-fluctuating tendencies.

It was not considered necessary, since fixed expenses are constant and need no explanation. Also, since an analysis of all kinds of expense was given in statement form in a separate exhibit in the article, and reference made as to the possibility of any overlapping of years by not properly spreading them on the accounts according to their yearly accruals, the reader had all the information that could be desired.

The writer cannot agree with Mr. Gilman when he suggests that the form of statement he proposes would prove more acceptable and be more easily understood by the executive, for the very reason that the effect Mr. Gilman shows for comparison is forced and not real, so caused by giving a fictitious value to the cost and expenses by making them the proportion of the actual sales each year, based on the percentages as shown by the focal or normal year. When these parts are duly considered, I hope you will not think the writer too presumptuous if he claims that the method he proposed, should have the preference over the one suggested by Mr. Gilman, since his were forced while the writer's were actual.

Mr. Gilman's idea may be all right for a comparison of two years, but if it were applied to any number of years over that, it would show just the condition that we are trying to avoid, i.e., a disconnected presentation of the items, which would make difficult a reconciling understanding of the effect of the inconsistent charges and credits, which can only be overcome by bringing the years that are to be compared to an average value as was shown.

Can you imagine setting up the differences as proposed by Mr. Gilman, when one stops to consider the application of his method to the Analysis of Cost of Goods Sold as shown in the June article? The writer would not like to attempt it. Since all sections of the statement should show consistency, one can contemplate the amount of work that would be involved by Mr. Gilman's method, if the comparison was for ten instead of three years. The average yearly decrease in profits of $\$16,954.89 \div 4.49\% = \$377,615.13$, the sales of the focal year, and the average decrease in profits for the years of 1918 and 1919 is 4.49% of the sales of 1917, and that is the information sought by the executive, and which he gets in concrete form.

The cause for the decrease was as follows:

The sales showed a "fall off" for the average year of 5.67% below those of the focal year, but this does not necessarily have a bearing on the percentage of profits earned, unless there had been a reduction made in the selling price of goods sold, without a corresponding reduction in the cost of goods sold. But when the "fall off" in sales was 5.67% as above stated and the decrease in the cost of sales was only .53%, it shows that the proportionate increase in the cost of sales was 5.14% of that of the focal year, thus placing the responsibility for the gross loss on sales to the cost of goods sold. Thus having located the section of the statement wherein lies the cause for the deflation in profits, we can disclose its hiding place.

If the average decrease in cost of goods sold had shown the same percentage as that shown by the "fall off" in sales, there would have been no change in the gross profits, in so far as the ratio of percentage is concerned, but there would be a change in their monetary value in proportion to the "fall off" in sales and costs.

Taken from another angle, suppose the decrease in the cost of goods sold had been 6.53% while the "fall off" in sales had been as above 5.67%, then $6.53 - 5.67 = .86\%$ which would be a gross profit on sales; and finally, if the expenses showed an increase of .65%, then the net profit would be $.86 - .65 = .21\%$ of sales.

From the foregoing examples, one can readily see that the executive's interpretation of these statements hinges mostly on his capacity for an understanding of the proper application of the percentages, as shown by the various costs to that of the "all off" in percentage of sales.

An executive is usually endowed with a keen sense of perception, and his range of vision would undoubtedly have the scope to comprehensively compare two or three average percentages submitted to him so he may pass judgment on them. We will therefore have to overlook any shortcomings he may have in "psychological training" and leave it to his knowledge of arithmetic in determining where remedies are to be used to check leakages in business operations which lean towards losses which may be in excess of those for the normal year.

Net Sales are always taken at 100%, and any percentage that the profit or loss is to that of the sales, is reflected in summary form on all profit and loss statements; therefore these percentages are all that is required by the executive to tell the story of business operations, and constitute the medium which keeps him enlightened regarding their fluctuations.

I hope that in the event that Mr. Gilman reads this article, he will accept it as the conclusion to a syllogism, made possible by the promises of the June and September articles "When Profits Fall Off."

Mr. Gilman's contribution on the subject was a masterly exposition of the principles involved and the importance to the executive of such a statement, and in the writer's opinion, his article is worthy of the very highest consideration from the subscribers to *Administration* who have not overlooked reading it.

I want to assure Mr. Gilman that I accept his criticism under the conditions expressed at the conclusion of his fine article, and I feel that we both may have started something which may become a custom and prove a big help to the executive in keeping in close touch with business conditions which may come under control.

In conclusion I wish to say: Since the paramount object of those representing the accounting profession is to give comprehensive methods of solution to all accounting problems, and at the same time have them efficient and easy of application, I hope the suggested form of statement for showing "when profits fall off" has not been made in vain, and that it will be accepted for what it is worth.

II

In the problem section of the September issue of *Administration* a criticism was made by Mr. G. W. Greenwood of my article in the June issue of the same magazine, of "Effective Interest on Bonds Sold," offering at the same time another method for arriving at these values. Mr. Greenwood said it would be difficult to show a bank purchasing the original issue of bonds for $900,000 and holding them for redemption according to the original plan, that it would be getting interest at the rate of .0410053 semiannually, but that it would receive interest at the rate of .039136225. I reiterate that .0410053 is correct, as was stated in the July article.

The total cash interest, discount, and premium under the original conditions in the above order, would amount to $262,000 + $100,000 + $25,000 = $387,500. To get the rate of interest represented by this amount when spread over the sale price of $900,000 reduced each six months by $45,000, we must get the sum of the balances as shown each period, which forms an arithmetical progression of 20 terms, of the common difference of $45,000. This would be $45,000 + $900,000 = $945,000 × (20 ÷ 2) = $9,450,000 the sum, which is also the single equivalent value on which the interest is $387,500. The effective semiannual interest rate would accordingly be, $387,500 ÷ $9,450,000 = .0410053%, which is absolute, and cannot be distorted into any other rate.

I did not attempt to find how Mr. Greenwood got the rate of .0391362257, for the simple reason that I knew it was not correct, and since his solution seemed to lack the details necessary to a clear understanding of how he arrived at his figures I decided not to attempt to analyze it to find out where he fell down on his calculation.

If the cost to the one who sold the bonds was $387,500 and the semiannual amounts

on which he had to pay interest started with $900,000, which was reduced each month $45,000, the rate of interest he would have to pay would be .04100537, but the cost as forecasted was reduced each period excepting the last two, at a redemption value less than the forecast, for a total of $34,000; therefore, the actual cost was $387,500 − $34,000 = $353,500. When this last amount is divided by the "single equivalent value, which is the sum of the periodic balances at their sale value, it gives $353,500 ÷ $9,450,000 = .03740740% as the semi-annual interest rate, which is correct.

If the banker who bought the bonds at 90, had put them on the market before their stipulated redemption date, he would benefit in interest as follows: Cash rate $262,500 ÷ $9,450,000 = .02777777% semi-annually plus the margin between their sale price and the purchase price paid by the banker, but this rate cannot be determined since the selling price of the banker was not given in the problem.

(Signed) H. D. Grant.

COST OR MARKET PRICE

Editor of *Administration:*

I have just read with interest the article on "Cost or Market—Whichever is Lower" in the July issue of *Administration.* Mr. Booth appears to be afraid that the merchant in the example he gives, might be deluded into thinking he had made a profit. Yet if he thought so, he would not be far wrong.

The merchant aforesaid was supposed to have bought material in October for $15 and to have put $5 worth of work on it. It, therefore, shows on his books at cost, $20. In January, the same material could be bought for $5. Work is valued as before, so replacement cost would be $10. He therefore reduces his inventory valuation to $10.

After such a change in market conditions of course the article could not be sold at a price to cover original cost. It is sold for $15.

Now it is only because the accountant is limited to money as the measure of all values, and because money is a false and unreliable measure of values, that he is forced to show on the books that the merchant made a loss.

The facts are these: The merchant starts business with article x on his shelves ready for sale. He sells article x for $15. Then he takes $10 of this, buys material and work and thus replaces the article. The other $5 he puts in the bank. He now has the same or an exactly similar article in stock that he had before, and in addition he has $5 in the bank. Did he not make a profit?

We are now considering a "going" business. We do not commence the transaction before the merchant bought his material, because he was not in business then. Neither do we suppose that he went bankrupt or quit business after making the sale. But even if we commence with the merchants $20 in his hand, and let him wind up with only $15 in hand, the example says that with the original $20 he could buy only one article x. With the final $15, he could buy 1½ articles x, or one article x with $10 of it, and have $5 left. The two articles are just exactly alike and of the same intrinsic value. But the measure has changed. The measure of $15 which in October would buy material for one article x, has now expanded until it covers material for three such articles.

Money is a medium of exchange. Its value is not in itself, but in the things it can be exchanged for. Then why should it be considered as of a settled intrinsic value, and not in connection with the value of the things it can be exchanged for? The answer is that we have not as yet discovered any method of keeping accounts except in terms of money. While the accountant is thus limited, however, the merchant should not be.

The important point of the matter is in the view taken by the merchant. He may say "I paid $20 for this article. Unless I sell for that, or more, I will make a loss." Or again he may say, "I can replace this article for $10. If I can get more than that, I will make a profit."

It is quite certain that much of the so-called profiteering, and much of the stagnation in business at the present time, is due to merchants, especially small retailers, persistently taking the former view. Until they adopt the latter view, it is doubtful

that they can do any business at a profit, or indeed do any business at all.

(Signed) W. A. Read.

Portland, Ore.

WHY OF F.O.B.

Editor of *Administration:*

The "Why of F.O.B. Shipping Point" by R. H. Watkins, appearing in your August issue of *Administration* so heavily favors one side of the subject with apparently no consideration of the other that it should not go unchallenged.

In the first paragraph, statement is made that only a memorandum of the transaction in the form of an arrival notice or delivery receipt is given receiver at destination, and that this has no standing in freight claim service.

This is decidedly in error for if shipment is delivered in a damaged condition, or if shortage exists, notation of this must be made on the delivery receipt of the carrier at time shipment is delivered to consignee. It is necessary for either party to have this receipt together with original freight bill before claim may be entered.

But why should the consignee or the receiver of a shipment which has been sold F.O.B. destination want to bother with claims? The shipper is bound by terms of sale when selling F.O.B. destination to deliver these goods to his customer, and to deliver them in good condition. If upon arrival, customer finds shortage or damage existing, it is up to the shipper to replace or adjust. If the entire shipment failed to show up and was sold F.O.B. destination the firm buying these goods would not think of entering claim, because under contract entered into when a freight bill-of-lading is issued, the shipper is the owner until delivery is made at destination.

As to overcharges that frequently crop out Mr. Watkins would claim these because goods were intended for his concern. The selling price has been based on the exact rate per unit. If through error of railroad shipment is charged more, who is the loser? For instance, a shipper has allowed $1.00 per unit for freight, this being based on the legal freight rate, and has been charged $2.00 in error, it is plain to see he is the loser, and should collect the claim.

The above may sound somewhat far fetched but it brings out the point.

The whole article fairly teems with points that are decidedly one-sided, and when read by a Traffic Manager of a firm selling almost 80% F.O.B. destination, they are hard to swallow.

This criticism should not be taken as an attempt to exert personalities for it is merely the writer's views which happen to conflict with those of Mr. Watkins. He brings out many good points, but also overlooks many that an adverse writer on this subject would emphasize.

Very truly yours,

LEWIS MANUFACTURING CO,

(Signed) R. Simmons,

Traffic Manager.

Walpole, Mass.

BRIEF ENTRIES

Evidently, some of the industrial plants not only furnish luncheon to employees but even go so far as to sell "baked food" for them to take home. At least some such condition would seem to obtain to judge from the following item printed in *The M-H Weekly*, the employees' magazine of the Massey-Harris Organization.

> The chef is experiencing difficulty these days to find enough plates in which to bake pies, on account of so many who take home pies and forget to return the plates promptly. You may only have one plate but when you give thought to the many ones that may be out you will realize how necessary it is to return them promptly if the Cafeteria is to keep up with the demand for pie. Please get yours back as soon as possible.

. . .

The Hoover Newsy News, employees' publication of the Hoover Suction Sweeper Company, devotes almost an entire page to the "Church Notes" of the various religious denominations in North Canton.

. . .

The United States Smelting, Refining and Mining Company calls its monthly magazine for employees *Ax-i-dent-ax*. As its title indicates it is published in the interest of the safety of its employees.

ADMINISTRATION

The Journal of Business Analysis and Control

NOVEMBER, 1921

ECONOMIC CONDITIONS IN EUROPE

BY HAROLD G. MOULTON* AND JOHN F. BASS†

IT was doubtless inevitable that the American people, irritated by European war experiences and disillusioned by the terms of the peace settlement, should revert to the traditional policy of American isolation. It is just as inevitable, however, that under the compulsion of irresistible economic forces the pendulum will again swing in the opposite direction—toward cooperation with Europe in the solution of post-war problems. Europe as the controlling element in the world economic situation is a fact which simply will not down. Regardless of the decision of the American people in last year's elections against further European entanglements, and notwithstanding the more recent Presidential announcement that the first and most important task of the present administration is that of tidying up our own dooryard, the paramount American issue of the next four years will be the European question. We could afford to forget about Europe during the post-war inflation period of last year; but now that the fateful processes of economic readjustment are at last under way, we shall find that European conditions will largely determine American conditions. The outstanding problem of the world today is the formulation of a program of international action designed to prevent progressive economic and social decadence.

The striking events of the past five years have tended to dull the apperceptive qualities of mankind. Events are daily chronicled in the newspapers which would have shocked the public consciousness five years ago; but they now pass unheeded by a public whose attention has been jaded to satiety by the abnormal events of the war and of the years that have followed. As a nation, we are so particularly weary of all things European that the vast majority of people in the United States now refuse to give European affairs so much as a passing thought.

Even among those who do give heed to international economic conditions, there is usually a tendency—born of a lack of understanding of the complex interrelations of the economic organization of the modern world—to seize upon every particular development or manifestation as proof positive that conditions are distinctly on the

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mend. Such developments are all too often mere surface phenomena, lulling us into a sense of economic security while underneath, silently but irresistibly, are being organized the forces of economic and social dissolution.

It is, moreover, still believed by many people that things will surely settle down, that problems will solve themselves; particularly if we refuse to look the facts in the face and to admit that conditions are serious. It is urged that business is after all only a matter of psychology and that if we will only banish pessimism and smile confidently though conditions look dark, everything will shortly automatically adjust itself. This economic Christian Science is supposed to have remarkable restorative powers notwithstanding the fact that such things as the foreign exchanges and national budgets have hitherto proved impervious to hypnotic suggestion. In any event, it is believed that time is still the great healer and that somehow the world will blunder through to "normalcy."

It is time that the United States cease drifting with reference to international affairs. It is time that we examine, in a spirit of scientific inquiry, the international economic and political situation as it stands today. It is time that we attempt to ascertain the probable results of recent political and economic developments in Europe. It is time that through study and discussion we begin to clarify our ideas and to formulate an American foreign policy—a policy, moreover, that will be directed not at any particular issue as it arises, but that will be based upon a consideration of the entire international situation conceived as one problem.

II

The confusion in American public opinion concerning the economic situation in Europe and its relation to American conditions is one of the most serious obstacles to world recovery from the disastrous effects of the war. If constructive assistance in the re-establishment of world finance and world commerce is to be rendered by the United States, we must first understand precisely what the present economic condition of Europe is; we must know what is to be remedied or re-established. And if the support of this country is to be enlisted in any comprehensive plans for international, economic reorganization, the rank and file of people must first be given a clear appreciation of the bearing of present European conditions upon conditions within the United States; they must be made to realize the full significance of the words, "The world is an economic unit; nations are economically interdependent."

As a matter of fact, one finds alike in the effervescent comments of returning tourists and in the soberer statements of financial and economic writers, the greatest diversity of view as to present conditions abroad. These sharp differences of opinion are largely to be explained by the selection of different facts or data for the purpose of testing conditions and by varying interpretations of the meaning of the data selected. When the economic physician attempts to appraise the condition of diseased Europe, he must not only look for the symptoms which are the real indexes of vital conditions, but must also be able to give balanced weight to each and to distinguish those indicating permanent underlying conditions from those reflecting nervous shock or temporary exhilaration.

Facts—admitted facts—are frequently presented as conclusive evidence of improving conditions when in reality they are merely evidences of disordered economic life. For example,

it is frequently pointed out that European capitals were never more gay, never more luxurious, or never more apparently prosperous than now. The truth is that the more disorganized is the currency and the more unsettled are prices, the greater is the tendency to wild extravagance and utter disregard of values. Examples of this kind, though quickly forgotten, are frequent in history; where peoples drugged with illimitable quantities of paper money have appeared to be prosperous and have continued to live extravagantly almost to the very moment of monetary and economic collapse. This was, of course, notoriously the case in the well-known John Law paper money episode in France in 1719. A writer of the time states:

> Plenty displayed herself through all the towns and all the country . . . in a word, riches flowed in from every quarter; gold, silver, precious stones, ornaments of every kind which contribute to luxury and magnificence, came to us from every country in Europe.

This was written only a year before the final collapse of the famous Mississippi bubble.

Again, it is often pointed out that there has been a great rise in the prices of securities since the armistice and that speculation is rampant, particularly in Germany. Once more, the truth is that speculation and rising security prices are directly attributable to the unsettlement of financial conditions and the inflation of paper currency. One is reminded, in this connection, of the period of paper money inflation in revolutionary France in 1791, which ultimately culminated in financial disaster.

Of this cataclysm, the historian, White, writes:

> With the masses of the people the purchase of every article of supply became a speculation—a speculation in which the professional speculator had an immense advantage over the buyer. Says the most brilliant apologist for French Revolutionary statesmanship, "Commerce is dead; betting took its place."

While speculation in some European countries is now less rife than it was in 1919-20, in others, where inflation has continued, it is now more rampant than ever. At the present moment Berlin is witnessing what is there known as the "Calamity Boom." No more fitting characterization could be given to the skyrocketing of security prices which accompanies the outpouring of paper currency during the period preceding the inevitable collapse of the whole tissue of artificial valuations.

Similarly, statistics showing an increase in national wealth and in the volume of trade do not in a period of great price changes accurately reflect fundamental economic conditions. For the volume of trade and of national wealth is computed in terms of money, which is depreciating in proportion to the rise of prices. A sample of the misleading conclusions drawn from statistics of trade expressed in terms of depreciated dollars is found in a recent statement in a prominent financial journal, commenting on export trade data furnished by a large New York bank. It was stated:

> Exports from the United States to Germany in the fiscal year which ends with June 1921 will exceed those of any year prior to the war . . . they will be of greater value, measured in good American dollars, than in .ny year in the history of our trade relations.

This statement fails to take into consideration the great rise in prices that has occurred. If allowance is made for this fact, German purchases in the United States during the current year are less than in any year as far back as 1900—before the so-called "American export invasion of Europe" began.

When one of the greatest banks and one of the greatest financial journals in the United States will thus misread economic data, it is not surprising that the average layman is misled.

The absurdity of growing excited over figures of expanding national wealth at a time like this may be understood if one reflects that the wealth of Russia since the beginning of the war has, as measured in present Russian money, increased more than a thousandfold. Other countries differ from Russia only in degree.

III

Statistics which show the huge profits earned by industrial corporations are equally untrustworthy evidence of economic recovery. A period of monetary expansion and rising prices always means imposing paper profits, largely obtained through the process of buying goods at one price and selling them at an advance. In Austria goods frequently pass through the hands of 15 or 20 speculative middlemen, each selling at a handsome advance above cost. The profits are thus the result of an inflation of values that carries with it no necessary increase in actual goods produced. In Germany, for example, the receiver of paper money dividends four times as large as pre-war gold dividends may at first glance appear to be prosperous; but his real poverty is revealed when he goes to purchase food, etc., at prices from ten to fifteen times the pre-war prices.

Improvements in agriculture and in food conditions are also cited as conclusive evidence that the worst of Europe's difficulties have now been compassed. Increasing agricultural production is essential to world recovery, it is true; but it is not the determining factor in world prosperity. The modern world is essentially an industrial world and on the recovery of industry hangs the rehabilitation of civilization.

Furthermore, the fact that social or industrial unrest is receding in this or that particular country at a given time, is by itself no conclusive evidence that economic recovery is a thing assured. Unrest may be lulled into momentary inactivity by fantastic padding of government pay-rolls, by liberal payments of pensions and unemployment insurance, by subsidies, etc., as has been the case in nearly every country of Europe. It may be temporarily allayed by the drugs of monetary inflation, to which reference has already been made, as has clearly been the case in Germany. It may be held in leash by extravagant governmental promises of reparations, as has no doubt been the case in France. It may even give way to grim despair, as has been the case in Austria. Even where the recession of unrest may fairly be ascribed to a recovery from the neurasthesia of the war era, this factor by itself cannot insure prompt economic readjustment. The mere fact that the German or the Italian or the Belgian people may now be showing a renewed disposition to work—while a hopeful sign—by no means makes it certain that these people will be afforded an opportunity to work. There are millions of people in the United States today who are now willing to work, whose hands unfortunately find no work to do. The same condition also exists throughout Europe.

How then can anyone judge whether Europe is on the highroad to economic recovery? What are the economic guide posts that reveal the true situation? If one is to understand the economic status of Europe at the present time, he must look beneath the transient surface phenomena, and read the lessons contained in the stories of:

1. The depreciation of the international exchanges.
2. The foreign trade statistics of the several European nations since the armistice.
3. National budgets.
4. The reserves of banking systems.

These are the true indexes of fundamental underlying conditions. The present article will deal with the first of these indexes.

IV

Foreign exchange, by means of which the trade of the world is conducted, is one of the least understood phenomena of commerce. This is not because the subject is inherently obscure or difficult but only because in normal times the exchange mechanism works with such automatic precision that, save to a few special students or dealers in exchange, it appears to be of little significance. A great American merchant confessed to the authors that, although for years he had purchased large quantities of foreign goods and paid for them with bills of exchange, not until after war dislocated the exchanges had he ever taken the trouble to learn the principles determining exchange rates. Even now, after two years of disastrous experience with exchange gyrations, it is not an exaggeration to say that the mass of business men does not clearly understand the forces governing exchange fluctuations and the significance of the relative depreciation of the exchanges of different countries.

Witness the persistent purchasing and holding of German marks by thousands of speculators throughout the world; speculators who possess not the slightest knowledge of the forces that will ultimately determine the value of German exchange. Witness the astounding statement made recently by a well-known American business man that prior to the war European exchanges fluctuated as much as they do now. Witness the equally astounding statement of a French financier that the depreciation of French exchange is merely due to the speculation of American bankers.

The whole problem of international trade and world recuperation is intricately interwoven with the functioning of the foreign exchanges. If in our efforts to stem the tide of economic deterioration and restore world prosperity we are to grapple intelligently with the problems involved, we must begin with an understanding of what exchanges are and what fundamental forces control them.

The conclusion to which an analysis of the foreign exchange mechanism leads is that the depreciation of the exchanges of the various European countries roughly reflects the economic deterioration of each. Now to understand why this is so it is necessary to consider not only what the exchanges are, but also what undepreciated exchanges mean and how in ordinary times before the war the exchanges were kept from depreciating. Only by so doing can one come to appreciate the enormous significance of the disruption of international trade and finance that was wrought by the war.

Exchange between the United States and Great Britain before the war, for example, was said to be at par when a one £ British sterling bill was worth \$4.866 in New York. What did par or parity of exchange mean, and how was this quotation, \$4.866, derived? Parity of exchange was only a simple statement of the relative quantities of gold in the American gold dollar and in the British gold pound. The British monetary unit, the gold pound sterling, has 4.866 times as much gold as the American monetary unit, the dollar. To cite other exchanges, the par between the

United States and France is 19.3, which means that the gold franc is worth 19.3 cents. Belgium, Italy, Switzerland and Greece have coins of exactly the same value as the French franc, and thus have the same parity with United States money. The German gold mark is worth 23.8. The gold coin of each of the various countries thus has its particular parity as compared with United States gold, and in turn the gold pound sterling, franc, etc., each has its parity with the coins of all the other countries.

Bills of exchange largely obviate the necessity of shipping currency in settling international obligations. The use of bills of exchange in international transactions can best be revealed by some concrete illustrations.

Assume that you are a New York exporter and that you have sold $1000 worth of shoes to one Perlmutter in London. At the same time your friend Jones in New York, has bought $1000 worth of lace from a well-known London lace merchant, one Potash. If you could then step over to your friend Jones's office and receive payment of $1000 from him, while at the same time Perlmutter in London was paying Potash $1000, both obligations would be settled. How much easier this would be than for Perlmutter to ship $1000 in specie across the ocean westward to you, and for friend Jones to ship another $1000 in specie across the ocean eastward to Potash.

The exchange mechanism, in fact, makes it possible to settle such international obligations without shipping specie every time. If you in New York were to draw an order (bill of exchange) on Potash in London, instructing him to pay Perlmutter $1000; if you then sold this bill of exchange to your friend Jones, you would receive payment for your shoes. Then if Jones should send this bill of exchange, which he had purchased from you, to Potash in payment for the lace, Potash would be satisfied as soon as he had collected from Perlmutter. Thus the shoes and the lace would be paid for without any shipment of specie across the ocean.

V

But in practice there are usually two difficulties which slightly complicate the process. In the first place, the various parties concerned may not all be acquainted with each other. Secondly, the amounts involved in the two transactions may not be identical, as was supposed above. Accordingly, dealers in foreign exchange (banks and brokers) are required as financial intermediaries. When the exporter in New York draws his bill of exchange for $1000 on the importer in London—or more frequently on a London bank which has agreed to lend its name to the importer for the purpose—the exporter in New York sells the bill to a foreign exchange banker in New York who will pay, when exchange is at par, $4.866. This banker then sends the bill to a correspondent bank in London which presents it for payment to the London importer, or to his bank. The funds received are deposited in the London bank to the credit of the New York bank which had forwarded the bill for collection.

Now when your friend Jones in New York wants to buy a bill of exchange with which to pay for the lace bought from Potash, he goes to the foreign exchange banker in New York, and the banker sells him a bill of exchange drawn by it against this London bank account—a bill for £1000 or for whatever amount the buyer may desire. Jones then sends this bill of exchange to Potash, in London, who presents it for payment to the bank against which it is drawn. The New York banker

thus acts as an intermediary between New York exporters and importers, serving in effect to bring them together, and serving also to make "change," that is, to break up bills of exchange into whatever denominations are required.

Exchange will be at par when the supply of and the demand for bills of exchange are equal. The price of a bill of exchange, like the price of wheat or any other commodity, depends upon the relative demand for and supply of bills in the market at the moment. If at any given time £1,000,000 worth of American products have been exported to Great Britain, there will be £1,000,000 worth of bills on London offered for sale in New York. If at the same time £1,000,000 worth of goods have been imported, there will be a demand for £1,000,000 of bills of exchange. The supply and demand will be equal and the price of sterling exchange will be at par, that is, at $4.866. But if it happens that while £1,000,000 worth of bills are offered in the market for sale, as many as £1,200,000 are demanded, the price will be bid up above $4.866 by those who desire the bills as a means of meeting their obligations abroad. On the contrary, if only £500,000 is demanded, the sellers will have to make concessions in order to dispose of their bills.

Exchange rates before the war normally fluctuated within narrow limits. The maximum extent to which (under normal pre-war conditions) the price of exchange could be bid up or forced down as the case might be, was determined by the costs involved in shipping the actual gold. One would be willing to pay $4.866 for a bill of exchange with which to settle a £1000 obligation because that would be cheaper than shipping the gold. One would be willing to pay as high as $4.885, under normal conditions, for such a bill; but one would not be willing to pay more than that because it would then be cheaper to ship the actual specie instead. On the other hand, it would be profitable to sell a £1000 bill of exchange for $4.845; but not for less since it would then be cheaper to pay the expense of importing the actual currency. These points, $4.885 and $4.845, are known as gold-exporting and gold-importing points.

The supply of and demand for bills of exchange do not depend merely upon the relative volume of exports and imports of commodities. Whatever the occasion for remittances of funds to Great Britain, bills of exchange are demanded, and whatever the occasion for payments to the United States, bills of exchange are supplied. For instance, if an individual is contemplating a trip abroad he places, say, $4.886 with a bank, express company, or one of the tourist concerns, and asks for letters of credit or traveler's checks. It then becomes necessary for the bank where the funds have been deposited, to transmit means of payment to the other side. This it does by buying a bill of exchange which it sends to a correspondent bank in Europe, where it is credited to the account of the American bank, and made available for the payment of checks when properly signed by the authorized party. Similarly, if an American corporation owes dividends to a stockholder in England it buys and remits a bill of exchange.

VI

The operations which give rise to the total supply of and demand for bills of exchange may be shown by an exhibit of the international financial status of the United States in a single year before the war. The following figures are for the year 1909. The items listed in the left-hand column give rise to a supply

Requiring Payments to United States		Requiring Payments Abroad	
Exports of Merchandise and Silver.............	$1,719,000,000	Imports of Merchandise and Silver.............	$1,356,000,000
		Interest on European Investments in U. S.	250,000,000
		Tourist Expenditures.....	170,000,000
		Remittances to Friends...	150,000,000
		Freight Charges.........	25,000,000
Total...........	$1,719,000,000	Total................	$1,951,000,000
Exports of Gold (net).....	48,000,000		
Grand Total..........	$1,767,000,000		
Balance Against United States	$184,000,000		

of bills of exchange and those in the right-hand column to a demand for such bills.

It should be carefully noted that our exports abroad were largely paid for by imports of foreign goods. No gold was received in payment; on the contrary we exported on balance $48,000,000 of the precious metal. The difference in the trade balance (between exports and imports of merchandise and silver) amounting to $363,000,000, plus the $48,000,000 of gold exports, was more than offset by other items in the international scalepans. We owed interest on European investments in the United States; our tourists were entertained in Europe; immigrants and others sent funds to friends abroad; and we owed foreign shipowners for transporting our goods. The final outcome of all these operations showed a balance of $184,000,000 still to be accounted for. This might have been settled by an exportation of gold; but it was in fact offset by new—permanent or temporary—investments in the United States by other countries.

The United States will thus have, in any given year, a net inflow or net outflow of gold as a result of variations in the supply of and demand for bills of exchange arising from trade and financial operations with all the world. The simplified treatment which we have presented ignores such factors as "finance," as distinguished from "trade" bills. Nor is mention made of roundabout operations involving several countries. These three-cornered operations play an important part in minimizing the flow of specie in the settlement of international obligations. But the essence of the problem is revealed in the above analysis. The mechanism of the exchanges makes it unnecessary for any country to ship specie except when the total of all foreign financial obligations that must be met is greater than the volume of remittances of every kind due it. International obligations are thus largely canceled; currency moves only as a last resort. Foreign exchange quotations, moreover, in ordinary times, fluctuate only from the gold-exporting to the gold-importing point, that is to say, in terms of British currency, from 4.885 to 4.845.

Currency movements maintain the equilibrium of the exchanges. Under normal circumstances it is impossible for an outflow of specie from any country (except of course from a gold producing country) to continue for any great length of time. The reason for this is that such an outflow is soon followed by financial and trade readjustments, which shortly restore the balance of international obligations. An outflow of gold from the United States

to England, for example, would reduce the volume of funds in New York, and lead to higher interest rates there. The inflow of funds to the London banks would at the same time tend to lower interest rates in England. In consequence international bankers would find it profitable to transmit, by means of bills of exchange, funds from London to New York. This would serve to restore the equilibrium of the exchanges and to prevent a further outflow of gold from New York, if not to bring about a reverse movement.

Variations in exchange rates above or below parity thus reflect temporary fluctuations in the supply of and demand for bills of exchange arising from international financial transactions of whatever nature. And gold movements serve as the corrective for any pronounced excess or deficiency in the supply of as compared with the demand for bills of exchange in any country. They thus act as a balance wheel in international economic relations, keeping the world in economic adjustment.

VII

The Great War quickly threw this delicately adjusted foreign exchange mechanism completely out of gear. In the autumn of 1914 there was a great rush on the part of European holders of American securities to sell them back to us as a means of securing the funds required for war purposes. At the same time the usual autumn exports of our cotton and other products were checked, both by a temporary decline in European demand and by the fear of German raiders. Insurance rates also tremendously increased, so that the gold exporting point no longer remained at $4.885. So great was the demand for sterling bills as compared with the supply, that British exchange rose at one time as high as $7.

But in the autumn of 1915 the situation was sharply reversed. When Great Britain began to buy great quantities of war supplies from the United States, the supply of sterling bills of exchange outran the demand, and exchange quickly fell to the gold-importing point. For a time Great Britain attempted to use the normal method of correcting adverse exchanges, namely, by allowing an export of gold; but this had shortly to be abandoned because of the disastrous consequence to the British monetary system of continued large exports of specie. An embargo was therefore placed upon exports of specie, except as government operations might require it. What was true of Great Britain was of course also true of other European belligerents.

The balance of payments continued to run so heavily in favor of the United States that sterling declined to $4.48—far below the gold-importing point. With the normal means of correcting depreciated exchanges—that is, by payments in gold—perforce abandoned, exchange rates, under the pressure of a great volume of exports, could fall almost indefinitely. During the war, however, the British and other European governments undertook and successfully accomplished an artificial stabilization of exchange rates—the sterling rate being "pegged" at $4.765. This was done through purchase of exchange by the British government whenever the rate dropped below that figure. At the same time the United States government began the war-time policy of shipping American goods abroad on credit. Such a method of regulating the exchanges could not be continued as a permanent policy after the war.

In order to restore the normal functioning of the international exchanges, the various European governments in the spring of 1919 abandoned the arti-

ficial policy "of pegging" the exchanges and shortly thereafter the United States government ceased making further loans to Europe. But for reasons to be discussed presently, Europe did not remove the embargoes on gold shipments; hence the normal corrective of depreciated exchanges could not operate. The results of the international economic maladjustments caused by the war were quickly shown in a sharp fall in exchange rates on all of the European belligerents.

What students of the international exchange mechanism had long foreseen must occur, now for the first time manifested itself to the general public. In the summer of 1919 the financial press daily discussed the sensational decline in foreign exchange; and business men, with a practical interest in foreign trade, began for the first time in our national history to interest themselves in the phenomenon of the exchanges. And thousands of innocent bystanders, acting on the familiar principle that what goes down must soon go up again, speculated heavily in francs, marks, and kronen. They are still pocketing their losses.

VIII

The explanation of the present depreciated European exchanges is in reality twofold: It is due in part to the tremendous changes that have occurred in the financial and trade relations between the United States and the several European countries—changes which have transformed the United States from a debtor to a creditor nation. And it is in part attributable to the fact that all of the European nations have been forced to abandon the gold standard for irredeemable paper money. These factors must be considered separately.

The changes that have occurred in the international financial relationships of the United States, a result of the war, may be best shown by setting off against the items entering into the international balance in 1909, the items entering into it in 1919.[1] The figures for 1909 are the same as were presented on page 584. For convenience they are repeated here.

It will be seen that nearly every item entering into the international balance has been changed during the war in such fashion as to increase the supply and reduce the demand for bills of exchange on foreign countries. The great increase in exports as compared with the increase in imports would alone have congested the exchange market and forced a decline in the price of bills of exchange. But in addition the United States has become a creditor nation, with the result that the $250,000,000 interest formerly payable by us to Europe has been wiped out and replaced by an annual interest charge against Europe of $622,000,000.[2] Europe can, therefore, no longer use interest due as an offset to the excess of imports; she must rather find means of meeting huge interest charges due against her.[3] Tourist expenditures in Europe have also been reduced.[4] And freight charges due Europe have been replaced by freight charges due to the United States. Only a single item in the balance has changed to the advantage of Europe, namely, the increase in remittances to friends abroad. It should be noted, moreover, that the export of gold was much larger in 1919 than in 1909. All but one of the elements en-

[1] These figures are taken from Vanderlip and Williams' "The Future of Our Foreign Trade," an article prepared for *The Review of Economic Statistics*, Harvard University Committee on Economic Research. The year 1920 still further increased the disparity, although the excess of exports was not so large as in 1919.

[2] As a result of further credit extensions since 1919 this figure is now considerably larger.

[3] Interest. This is, however, temporarily being funded. See footnote [2] above.

[4] The years 1920 and 1921 have, however, shown considerable increase in this connection.

Figures for 1909

Requiring Payments to United States		Requiring Payments Abroad	
Exports of Merchandise and Silver	$1,719,000,000	Imports of Merchandise and Silver	$1,356,000,000
Exports of Gold (net)	48,000,000	Interest on European Investments in U. S.	250,000,000
		Tourist Expenditures	170,000,000
		Remittances to Friends	150,000,000
		Freight Charges Due Europe	25,000,000
Total	$1,767,000,000	Total	$1,951,000,000

Balance Against United States $184,000,000

Figures for 1919

Exports of Merchandise and Silver	$8,151,000,000	Imports of Merchandise and Silver	$3,993,000,000
Exports of Gold (net)	368,000,000	Tourists Expenditures	50,000,000
Interest on American Investments in Europe	[5]122,000,000 500,000,000	Remittances to Friends	300,000,000
Freight Charges Due U. S.	73,000,000		
Total	$9,114,000,000	Total	$4,343,000,000

Balance in Favor of United States $4,771,000,000

tering into the international scales therefore worked to bring about a fall in exchange rates—through increasing the supply relatively to the demand for bills of exchange.

It remains to be noted that the international scalepans for the year 1919 were balanced through the extension of American investments abroad. This was accomplished partly by the sale in the United States of European securities; but much more largely by the sale of goods by American exporters on credit. That is to say, exporters shipped goods abroad and received not cash but promises to pay at some not distant date in the future. Necessary renewals of these credits have, however, made them in the nature of long-term rather than short-term credit extensions. Meanwhile, the exporters have borrowed funds with which to carry such export credits largely from the commercial banks.

[5] The $122,000,000 represents the estimated interest on private investments and credits abroad; the $500,000,000 is 5 per cent on the 10 billion dollars loaned by the U. S. government to European Governments. Payment of this is being indefinitely postponed, the annual interest charges thus being added to the principal. It has been computed that by 1923 the accumulated amount will stand at $12,350,000,000, the interest charge on which would equal at 5 per cent, $617,000,000 annually. In addition to these debts owing to the American government, foreign governments owe to private individuals in the United States approximately $2,000,000,000 (Financial report of the American Committee to International Chamber Commerce meeting in London, June 26, 1921).

IX

The second factor instrumental in the depreciation of the exchanges, namely, the abandonment of the gold monetary standard in Europe, while not so generally understood, is even more easily explained. We have already seen that the normal part of exchange is an expression of the comparative quantities of gold in the American and foreign monetary units. At the present time, however, the parity of exchange between the United States and Great Britain is not $4.866, for the reason that American money which is

redeemable in gold and is therefore the equivalent of gold, is exchangeable only for British paper money, which is not redeemable in gold and is, therefore, not the equivalent of gold. Since all of the European countries now have irredeemable paper money, the parity of exchange between American gold and European paper currency is in no case the same as the former parity between American gold and the gold of the several European countries. In fact, strictly speaking, there is no longer any parity.

Since British paper money has depreciated about 20 per cent in comparison with British gold, American traders and financiers are now unwilling to exchange $4.866 in American gold for £1000 in British paper money. Foreign exchanges have fallen to the extent that the domestic paper currency of European countries is now worth less than gold. With reference to Great Britain this is a factor that is probably secondary in importance to the maladjustment in trade and financial transactions—since the British paper currency is not very greatly depreciated. But with reference to the continental countries, particularly those east of the Rhine, depreciation of the paper currency is the principal cause of falling exchanges.

The truth of this last contention may be seen from the fact that while the trade and financial relations between the United States and the central European countries have been far less unbalanced than between the United States and England, for example, the depreciation of the exchanges—as will be seen from the table below—is far greater in the central European countries.

The following table gives the prewar normal parities between the United States and the principal European countries, the rates one year ago, and the present quotations.

The extent of the depreciation of the exchanges mirrors in a rough way the degree of general impoverishment and economic retrogression in each European country. And the relative depreciation from par of the exchanges of the different countries reflects pretty accurately the varying degrees of economic deterioration in the several European countries. Classified in broad groups it will be seen that the exchange of the neutral nations are the least depreciated, those of the allied belligerents next, and those of the central and

	Par	Aug. 3, 1921	Aug. 3, 1920
Great Britain (sterling)	$4.866	$3.56	$3.64
France (franc)	19.3 cents	7.62 cents	7.35 cents
Italy (lira)	19.3 "	4.22 "	5.20 "
Belgium (franc)	19.3 "	7.32 "	8.07 "
Germany (mark)	23.8 "	1.22 "	2.20 "
Austria (crown)	20.3 "	.12 "	1.60 "
Roumania (leu)	19.3 "	1.25 "	2.56 "
Czecho-Slovakia (crown)	20.3 "	1.25 "	2.00 "
Poland (mark)	23.8 "	.05 "	.60 "
Jugo-Slavia (crown)	20.3 "	.56 "	1.35 "
Denmark (krone)	26.8 "	15.18 "	15.60 "
Finland (mark)	19.3 "	1.55 "	3.95 "
Holland (floren)	40.2 "	30.50 "	33.10 "
Sweden (krona)	26.8 "	20.33 "	21.15 "
Norway (krone)	26.8 "	12.66 "	15.70 "
Switzerland (franc)	19.3 "	16.40 "	16.95 "
Spain (peseta)	19.3 "	12.75 "	15.25 "

eastern European nations most of all.

During the past year the exchanges on every European country, except France, have declined. Those of the countries of central and eastern Europe have declined very heavily; those of the neutral countries considerably; and those of the allied nations, France excepted, somewhat. One must therefore conclude that on the whole the foreign exchanges indicate a European situation somewhat worse this year than last.

X

Many persons have been misled during the past six months by rising exchanges that were merely attributable to seasonal influences. The rates of the winter and spring every year are substantially higher than those of the summer and autumn. This is mainly because it is during the summer and fall that our exports are largest. The significant thing to note, therefore, is that, speaking generally, the rates this year have been below those of last year at each season of the year. The upward movement did not go as high as last year, and the downswing is, therefore, more pronounced than in 1920.

The depreciated exchanges, while reflecting the economic decadence of European nations as compared with the United States, at the same time also act as a deterrent to European economic recovery. There are two ways in which the instability of the exchanges impedes foreign trade and the economic rehabilitation of Europe. First, it greatly increases the risk of trading operations and thus operates as a damper to business enterprise. The exchanges fluctuate widely from month to month, due (1) to speculative buying or selling of exchange in anticipation of improving or worsening conditions in Europe, (2) to changes in the volume of trade and other international transactions, and (3) to fluctuations in the value of the irredeemable paper currency of the various European countries.

Since all modern business is organized on a profit-making basis it is of the utmost importance that business men be able to calculate their chances of profit with a reasonable degree of certainty. But fluctuating exchange rates mean great uncertainty as to the value of the money ultimately received in payment for a shipment of goods. Contracts entered into on the basis of the exchange quotations of January 1, are settled on the basis of exchange quotations some months later, with resulting uncertainty for both parties to the transaction. The greater and more unpredictable the fluctuations in exchange rates, the greater the hesitancy to undertake the fulfilment of time obligations.

XI

The second way in which depreciated exchanges impede the economic recovery of Europe is through increasing the cost of goods purchased in the United States and other countries whose exchange rates are relatively high. For example, when French exchange is quoted at 6.40 it is worth only about one-third of its normal value of 19.3. This means that a French importer has to pay 19.3 cents for every 6.4 cents worth of goods received, or $3 for every $1 worth of goods bought in the United States. This would not matter if prices in France were higher than those in the United States in precise proportion to the depreciation of French exchange, that is to say, if the $1 worth of goods bought in the United States could be sold in France for $3, plus profit. But such is not precisely the case. When, for example, at the worst French exchange was worth only about

one-third its normal parity, French prices were only about double American prices.

It should be observed, moreover, that since French exchange is less depreciated as compared with British than with American money, it pays France to import from Great Britain rather than from the United States, whenever it is possible to obtain the required goods there; and inasmuch as German exchange is greatly depreciated even as compared with the franc, France can buy still more cheaply in Germany. Since America is the dearest market in the world, purchases have to be confined to the minimum.

While this situation thus threatens our export trade, it could not seriously impede the recovery of Europe, were it not for the fact that European countries are in so large a degree dependent upon American imports. Since the armistice they have in fact been buying huge quantities of American goods on credit, but at a very heavy cost to themselves. European nations have been going ever more deeply into debt, without having effected any substantial recovery from the effects of the war. And not the least unfortunate aspect of this increasing indebtedness is the fact that so considerable a portion of it was contracted in the purchase of non-essential commodities during the period of the post-war luxury debauch. In view of the psychological effects of the war it was perhaps inevitable that we should pass through such a period. Be this as it may, the consequence has been that Europe still stands in great need of purchasing certain kinds of materials from the United States. But Europe is on the whole less able to make these purchases now than it was at the time of the armistice.

A CHART TO TAKE TO THE BANK

BY ARTHUR R. BURNET *

THE head of a large manufacturing concern went to see his banker in regard to negotiating a loan. Among the papers that he took with him was a chart drawn on a letter-size sheet. It showed in graphic form the operating statement of the company for the last fiscal period.

After studying the chart for a few moments the president of the bank said: "Mr. Smith, I want you to take lunch with me. This afternoon we are to have a meeting of the directors, and I would very much like to show them this chart. As you know, we have on file the financial reports of a great many companies, but I have never seen a more complete and a more illuminating statement on a single sheet of paper than I find in this chart."

The manufacturer stayed, and got the loan, and incidentally, his statistical department had to make sample copies of the chart for the bank president and the directors. This remarkable chart form is shown in the illustration.

It will be seen at once that the chart is composed of five columns, and that each of them represents 100 per cent. Therefore the chart can be read in percentages or in concrete dollars. Beginning at the right, the full length of the first column stands for a total income of $285,000, of which 91.2 per cent or $260,000 came from sales, while a small amount was derived from outside work and from interest earned.

The second column stands for exactly the same amount as the first, but it shows what disposition has been made of the total income. In the illustration, 61.4 per cent went for the cost of goods sold, and 17.6 per cent for selling expenses, while the profit was 20.7 per cent. The next column analyzes the 61.4 per cent that appears in the second column by treating it as 100 per cent, and then dividing it into raw materials and mill operating expense. The fourth column is a detailed study of the lower section of the third column, and likewise, the fifth column breaks up into its components the item of selling expense which is shown in the second column as a comparatively small percentage. Thus it is seen that one column furnishes a general view, and that a succeeding column presents a "close-up" of a certain one of the important elements.

The outstanding merit of this chart is its simplicity. At the close of the fiscal period as soon as the figures become available they can be plotted by means of a scale or ruler reading in tenths, or commercial paper can be secured having percentage divisions printed faintly along each of the columns.

The value of the chart to the executive is that it not only furnishes him with the bare facts of his business, but it also shows unmistakably the relation of those facts to each other. The real executive does not think in terms of unrelated facts, but, though he may not always be conscious of it, his mind automatically converts the figures into percentage or other relative forms. In certain lines of business there are more or less definite ratios fixed between the various factors involved, and in

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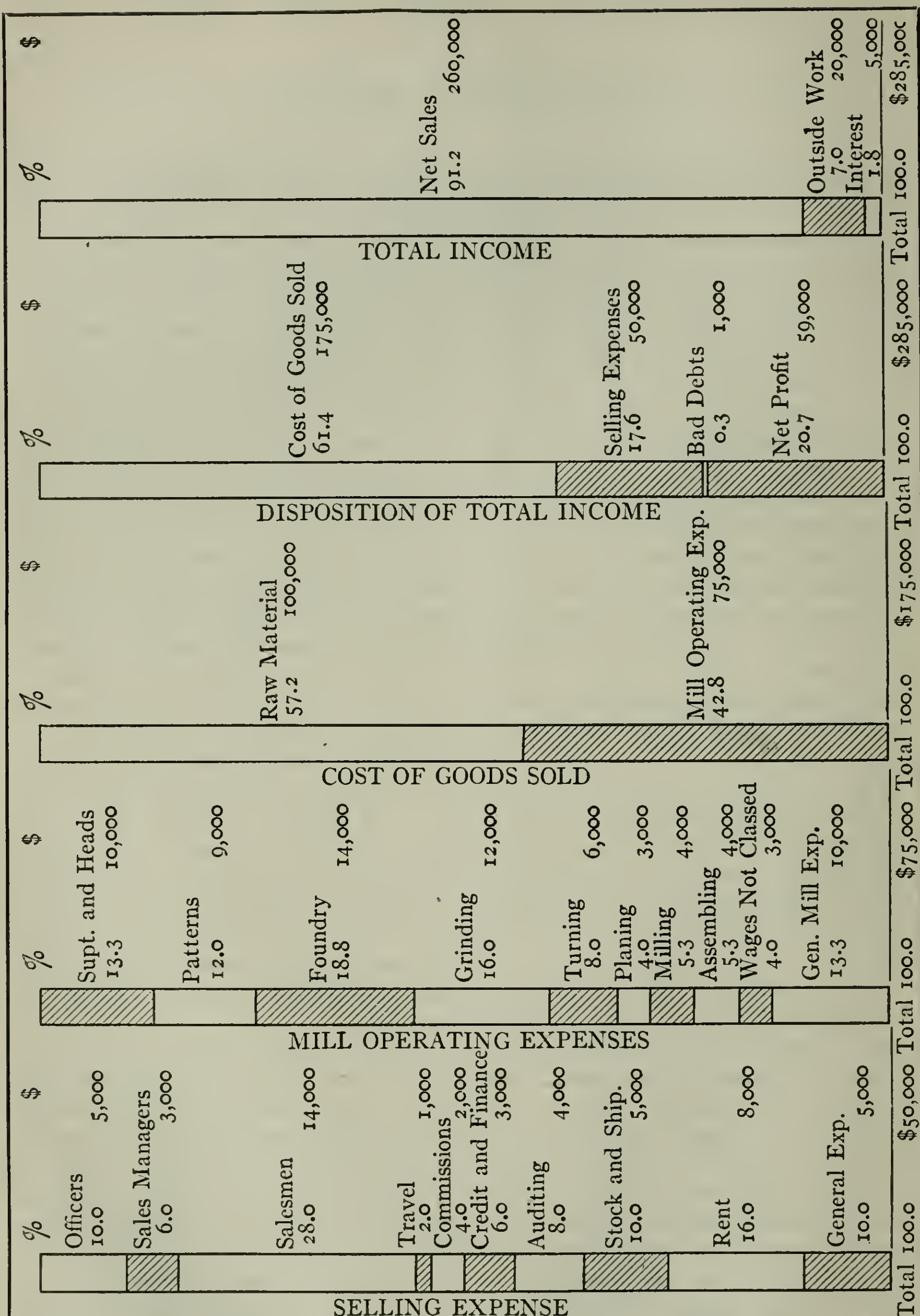

Chart Showing Selling and Expenditure—Fiscal Year 1920

every business standards can be set up in advance by which it is determined whether any given performance is good or bad. To record and to visualize such standards is one of the most important functions of graphic methods. For example, the illustration shows the ratio between profit and total income; the relation of selling expense to the total income; the cost of raw materials to the total cost of goods sold; the distribution of the components that make up the total mill operating expense, and the same for selling expense. Serious variations from what is regarded as standard and normal can be quickly observed.

The chart provides an excellent means of showing important changes in the business from period to period. Suppose the percentage of profit to income has fallen off between two periods. The chart will make plain whether this was due to an increase of the cost of goods sold or to an increase in the selling expense, or to both. If the trouble is located in the cost of goods sold, the chart will go on to tell whether it was due more to the advance on the cost of raw materials or to the increase in mill operating expenses. Likewise, the trouble might be traced down to the individual details in the last two columns, and the responsibility for the variation could be definitely determined.

When charts for two or more periods are compared, the differences cannot pass unnoticed. This emphasizes the usefulness of a percentage chart because the proportions between the items and the total, and between item and item can be compared even though the actual dollars are not the same in the two periods. The percentages furnish a means not only for studying the balance between departments or between manufacturing processes or between the elements of selling cost, but also a means of comparing the results of this particular business with outside data. For example, the United States Census of Manufactures gives summary figures for industries covering wages, cost of materials, value of products, and value added by manufacture, etc. After making simple adjustments, the ratios between the figures given in the chart can be compared with the ratios derived from the information reported by the government. Census figures are primarily intended for use as a background against which a manufacturer can throw the results of his own business for purposes of comparison.

This is also true of other combined figures such as those furnished by trade associations. If the individual business man knew that his costs, as related to income or to the total cost, stood about the same as or lower than those of the entire industry to which he belonged he would be able to operate more intelligently, and with greater fairness to himself and to his employees as well as to his customers. A few alert trade associations are furnishing their constituency with such basic information. As a means of promoting efficiency, and of lowering costs it is quite within the imagination to picture a group of competitors getting together and comparing charts. For this purpose the dollars could be omitted and the percentages alone shown.

The practice of estimating receipts, and of planning expenses ahead of time is gaining favor. A study of charts like the one in the illustration would make it possible to budget income and outgo in advance. A budget chart might even be prepared, and a chart showing actual figures compared with it later.

THE ECONOMIC QUESTION OF OUR PACIFIC COAST

BY CORNELIUS VANDERBILT, JR.*

THE greatest economic question now facing our western coast is that which concerns the encroachment of the little yellow man from across the Pacific. Never in the history of America has the nation been confronted with so grave and complex a racial problem.

We must realize that this is a national problem which must be dealt with in a broad, comprehensive manner; yet it would indeed be tragic to overlook the fact that it is also a state and sectional problem that must be worked out in full accordance with the interests of the people living in that section.

The astutely clever statesmen of Japan must be aware that much of the doubted sincerity for their government is the outcome of an imperialistic policy which they are trying to foist upon our western states in a cloak of gentlemanly democracy. Yet the Japanese claim that opposition to their emigration to America is world jealousy of their phenomenal rise as a nation.

For the past three or four years the author has had the opportunity as a journalist to view this encroachment at its best. My investigations led me into many nooks of this coast which would otherwise have remained wholly unknown to me. Yet in doing so I learned from first-hand information the exact conditions as they are now facing us; and the information thus gained has been of enormous importance to me in my present writings.

In the western section of the United States which includes the states of Washington, Oregon, and California, there are by the latest census reports today approximately 4,200,000 whites. The same area of the East, including the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, North and South Carolina, Georgia, and Florida, has approximately, 33,100,000 inhabitants. Were the Japanese in the East in the same proportion as they are in the West there would be 1,226,000 there at present.

I dislike statistics perhaps more than even the audience of this magazine, but I must call attention to a few of the more outstanding ones in order to demonstrate my point.

In the state of California, according to the best authorities, and I am now citing the Board of Control's report to the Washington administration, there were 3,839,500 acres of irrigated land in 1919. Of this, oriental persons controlled directly or otherwise 623,752. In 1909, 10 years previous, the Japanese Association of America reported 83,252 acres held by their countrymen; it will therefore be seen that the aforementioned figures show an increase of 600 per cent in 10 years.

In 1913 under the gubernatorial sanction of Hiram Johnson, California enacted her first Anti-Alien Land Law. This law intended to keep all aliens who were not eligible to citizenship from owning land in the state. But there was a loophole and Japan, as is her custom, took advantage of it. American-born children of ineligible alien parents were, therefore, able to own land which their parents tilled and looked after.

Besides this, under the old Johnson law, it was necessary to procure a guard-

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ian for such children. Many irresponsible lawyers were found to have acted in this capacity. In 1920 it was therefore no surprise to find over 10,000 parcels of land owned in this manner, almost illegitimately. With the fear of this condition getting past the measures of active control, the Anti-Alien Land Law, which has been creating such a commotion in our far southern boundary, was introduced, and subsequently passed at the polls on November 2, 1920.

The state of Washington has an anti-alien land law which has, in a measure, proved more effective than that of California. In brief it demands that ownership of lands other than by those who in good faith have declared their intentions of becoming citizens is prohibited, except when acquired by inheritance or under mortgage. In 1914 an effort was made to amend this in order to make it inapplicable to conveyance of lands within cities to resident aliens; the proposal was voted down.

However, in the city of Seattle today, much of the business property is controlled by Japanese. One of the largest steamship companies on the coast, runs its liners into this port under the Japanese flag; and through possibly underhand dealings uses its docks under the same emblem. A big department store, the biggest retail store in the northwest, is controlled by oriental capital; and some of the most influential newspapers of that region are much in the hands of the Japanese. The best hotel, as well as numerous smaller hotels, apartments, and boarding-houses, are run by Japanese capital.

Mexico has a land law which forbids any foreigners, naturalized or otherwise, from owning land within a zone of 100 kilometers from her frontiers, or 50 kilometers from her seacoast.

The United States Government is in possession of the facts that notwithstanding the "Gentleman's Agreement," the population of lower California, that section of Mexico which is practically separated from the laws and customs of the mainland, has had its population steadily increasing through percolation from the Japanese fishing fleets which ply off its coast.

Just how far this scheme of colonization on that peninsula has advanced no one can know unless he has visited it.

What is the inevitable result of a dense oriental population in northern and western Mexico? It will perhaps mean the economic dominance for the entire southern republic, as the average Mexican is by no means the equal in intelligence of his neighboring cousin. If such a condition eventually exists in lower California, it will mean an intolerable menace to our southern border.

Hawaii has had her troubles with the yellow race. Today orientals outnumber the whites there, ten to one. Last year the House of Representatives passed a homestead law for Hawaii, in which the privilege of acquiring a homestead was confined strictly to continentally born Americans or native Hawaiians who were descendants of native born inhabitants of the island. This summer Representative Kalanianaole produced a Joint Resolution in the House of Representatives providing for immigration to meet the emergency caused by the acute labor shortage in the Territory of Hawaii. Suppose for a moment such legislation were to be passed by Congress; it would be but a short time before Japan would control this island along with Shantung, Yap, Korea, and other countries over which she is so diligently encroaching.

Oregon has an anti-alien land law which is effective to a certain degree but even now some of the best lands in that state are in the hands of oriental farmers. During the last session

of the Oregon legislature, State Senator Bruce Dennis, together with eight of his compatriots stood for an amendment which would strengthen exclusion policies. They were defeated by the combined efforts of wealthy Japanese and the Portland Chamber of Commerce. The latter organization, for the sake of securing cheap labor, claimed that because our industries brought cheap Japanese labor over to this country, our people should be willing to keep this element here.

The South, that has been so successful in handling its own racial problem, with the result that equality of opportunity is within easy reach of all races, could not find it difficult to realize the situation that now confronts the West. In sum, the Japanese question, one of economics, is as dangerous as that which faced Lincoln's administration.

The birthrate in Japan is between 30 and 40 per thousand population. In California, according to statistics furnished by the census and the legislature, the rate is 62 per thousand as against 17 for the white race.

The proportion of Japanese males to females is four to one, while the whites are one to one. If the Japanese females were in the same proportion as the whites, their birthrate would be multiplied by four.

In 1910 the census showed 313,281 married white women under 45 years of age in the state. During that year the number of white births was 31,000, disclosing a parentage percentage among whites of 9.9. Nine years later there were 15,211 Japanese married women in California, with the total births of 4,378. This showed a parentage percentage of 28.8 or approximately three times the percentage of whites in the same period of life.

The Japanese encroach up to the very doorway of the whites, but there is an uncrossable chasm of racial integrity between them. They have nothing in common, and this racial prejudice simply aggravates the situation.

The orientals have distributed propaganda to the effect that the best way to solve the coast problems is to permit Japanese to marry white women. True, whites have married Japanese in Japan but in most cases this was to insure the ownership of their property. To my knowledge there are only a few, easily counted on the fingers of both hands, legitimate oriental marriages on the Pacific Coast today. Most of these have had such terrible endings that all those poor white girls who have experienced a yellow husband have either committed suicide or are lecturing against such marriages.

However, be that as it may, Professor Inui of the Social Science Department of the University of Southern California, claims that such marriages and assimilabilities are for the good of both races. He says that the Japanese infant born of a white mother, on attaining the age of twelve, is 4 $^{7}/_{10}$ pounds heavier and 1 $^{3}/_{10}$ inches taller than one of same age born in Japan.

Further statistics tell us that the population of Japan is increasing 700,000 annually. Therefore in a little more than 85 years she will double her present population of 60,000,000 inhabitants. What then will she do with her expansion? This is the question which the statesmen of the world will be called upon to decide this November in Washington. Something must be done; and probably the nations of the world will realize that they must co-operate with Japan in the matter of finding a suitable outlet for her excess population. It is very important, as well as humane, that we do this; for the future peace of the world depends largely upon the solution for the Japanese problems. Our west coast and Japan must be given a fair deal.

COMBINATION CHECK AND JOURNAL VOUCHER DISTRIBUTION

BY HARRY A. GRUBE *

IT is almost universally accepted that the cost accounting data, in most instances at least, should be tied in with the general books. Probably the only method whereby the plant cost data can be recorded in the general ledger is by the usual journal entry in one form or another. In addition to the cost accounting data, the general books are the means of assembling a great amount of detail in connection with the other operations. In fact in a well-organized business with a well designed system, the cost accounting and other data are so intermingled that it would be rather difficult to attempt to separate them into two parts.

There are, however, probably as many combinations of different ideas that go to make a system or routine as there are plants and establishments. Some of the combinations, as is well known, are more or less made up of set forms and ideas; that is, they are not readily adaptable to changes that may come up. They are not elastic.

The ideas that should be worked into a system should be of as simple a nature as will allow the assembling of the proper data; they should be elastic enough so that it will not be necessary to have new forms printed whenever a change in an account is made or when a new account is added. The system should also be arranged so that the required data can be recorded with the least amount of labor. It should be simple, yet practical, so that clerks with a fundamental training will be able to carry out the idea.

* Treasurer of the Intertype Corporation, Brooklyn, N. Y.

With the above views in mind, an elastic system of vouchering purchases and sundry payments as well as journalizing plant and other items has been arranged for a moderate size plant. The idea, however, is so elastic that it is adaptable in principal to even the largest plants managed by the ablest executives.

The system or routine, as it may be called, covering vouchering, will be taken up from the time the approved vendor's invoice, with receiving ticket attached, is received at the general office until the check is mailed and the items posted to their respective accounts in the general ledger, showing how the journal items may be worked into the accounts at the same time.

It might be well to mention here that in these days of standardization, standard sizes of forms should also be used for all records. It would be ideal if all forms could be made the exact same size, but this is not practical. There are, however, a number of standard sizes as 3 x 5, 4 x 6, 5 x 8, letter size $8\frac{1}{2}$ x 11 and the letter size with the binding edge, 11 x 11. Sometimes when a form is intended to be pasted or otherwise fastened under another form, it is well to have it just a trifle smaller, say one-fourth or one-half inch. The forms that are used to illustrate this article have been prepared with the above ideas in mind.

It is taken for granted that when materials are received at the factory or warehouse, they are properly accounted for on receiving tickets (these receiving tickets in most cases being a duplicate

of the purchase order) and that these receiving tickets are attached to invoices received from the vendors and further, that the invoices have been gone over and approved, not only as to quantity and price, but also as to delivery, discounts, etc. These invoices, with the receiving tickets attached, are sent with certain forms, whereon they are listed, to the invoice clerk at the general office; the invoice clerk having already received from the receiving clerk records whereby he can determine as to whether the invoices and receiving tickets have been received for all receipts at the factory, and that only such invoices and receiving tickets are received, and further that all carrying charges that are paid are accounted for and that no carrying charge is paid the second time.

These invoices, with the receiving tickets and any other data thereto attached, are then sorted according to vendors' names and are, during the month, or at the end of the month, prepared for vouchering. Bills subject to discounts, unless a monthly settlement has been arranged for, are of course sent through from the factory promptly and paid within the limit of time. Frequently it is necessary to pay invoices in advance of receipt of material in order to secure the discount. The receiving ticket then comes along as soon as the material is received and properly accounted for. Any deduction notices that may be made by the receiving department or the purchasing department come along with the invoices and are deducted at the time of settlement. Where there is a great volume of vouchering to be done, it is well to have a printed form made upon which to enter the items that are to be vouchered. Figure 1 shows such a form.

This form may be ruled in different ways so as to correspond with the rulings shown in Figures 7, 8, and 9. The invoices, with the receiving tickets attached, and with a copy of the purchase order (which has previously been received from the purchasing department) are then handed, together with the "Copy for Audited Voucher Check" to the voucher clerk. The voucher clerk will, on receipt of such copy for voucher, issue check and voucher. The voucher clerk may also issue a check and voucher upon a "Request for Check," a form of which is shown

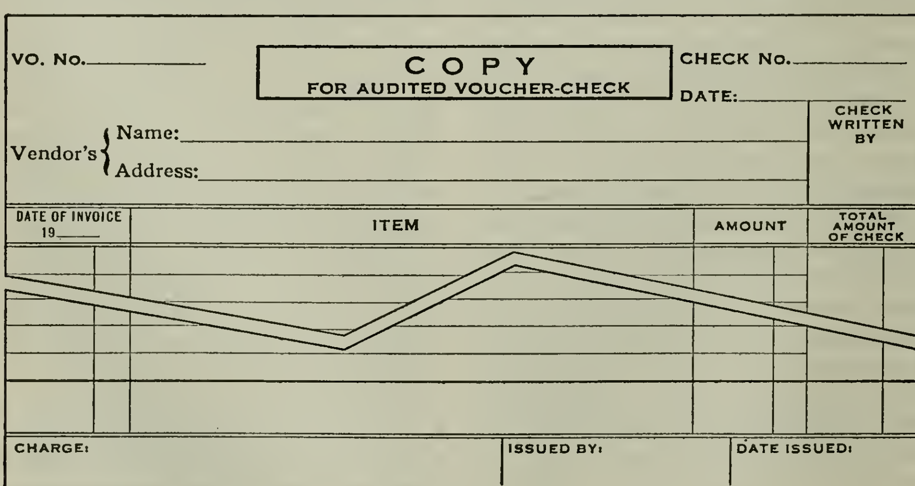


Figure 1

AUDITED VOUCHER No.............. **REQUEST FOR CHECK** CHECK No..............

Treasurer:

Please have a check drawn for.............................$..............

made payable to (Name)..

(Address)..

as payment for ....$..............

..................................“..............

..................................“..............

..................................“..............

..................................“..............

Our Purchase Ord. No.

Give the check to M.. If the Check is to be sent direct, as per address above indicated, place X here →

DEBIT: Issued by: (Signed)..............................

Date:.............................. for Dept..............

FIGURE 2

in Figure 2. The voucher check, the reverse side of which is shown in Figure 3, is drawn up along the lines of the ordinary voucher check in use and when folded may be mailed in an open face envelope. This voucher check is typewritten at the same time that the voucher shown in Figures 6, 7, 8, or 9 is written. As soon as the invoices, deductions, and the like have been noted, by the turning of the typewriter platen, the check and carbon paper can easily be removed. The distributions of the items on the voucher can then be typewritten on the lower part of the voucher. As soon as these have been written, the check is put in the typewriter, face side (Figure 4) forward and is completed.

Sometimes it may be desirable to use a trade acceptance. The trade acceptance form shown in Figure 5 is made up along the same lines as the voucher check, the reverse side being the same as Figure 3, with the exception that instead of the words "Check No." there are the words "Trade Acceptance No."

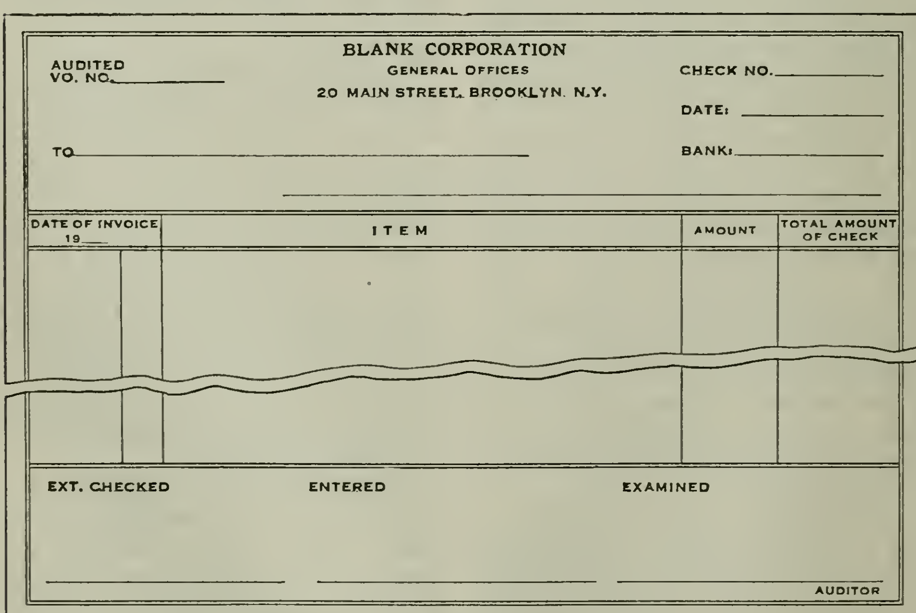
Checks may be written on forms on which the bank on which they are to be drawn is specified, or they may be written on forms on which no bank is specified, the idea being to use a rubber stamp and insert the bank at the time the check is signed and sent to the payor. It frequently happens, especially towards the end of the month, that a number of bills are vouchered, payment of which will probably not be made for several weeks, and therefore, the bank through which payment will be made is not known.

Where the treasurer's department is removed from the auditing department, these checks, attached to vouchers, are sent to the treasurer's department and held there until the department makes payment, at which

time the vouchers are returned to the auditing department and the checks mailed to the payors.

There are a number of ways of filing vouchers. Some are folded and filed away in narrow filing compartments; others are just filed upright in regular bill file size drawers. However, probably the best way to file them, so as to have them easily accessible and in good condition, is to paste or fasten with fasteners, the audited voucher, as well as invoices, receiving tickets, and any other papers pertaining thereto, to a thin manila cardboard or bristol board, size 9½ x 11½, so that they will file in the regular letter file. When there are a large number of papers, so that pasting or fastening is not practical, an envelope 9½ x 11½ of rather strong texture is used, the papers being placed in the envelope and the voucher being pasted thereon. These cardboards or envelopes being about one-half inch larger around than the vouchers permit a space for numbering. They are then numbered in the upper right- or left-hand corner, on the long end of cardboard, so as to show the year of the voucher, the month in which it was issued, and the number of the voucher in the particular month, as for example: 21–4–8 would indicate that the voucher was issued in April of 1921 and that it was voucher No. 8. These same numbers are also shown on the voucher and on the front and back of the check. Where there are a number of vouchers, it is well to use a numbering machine with about ten numerals, the first two for the year, the third left blank, the next two for the month, the sixth left blank, and the next four for the number. This machine is always ready for the next voucher. Four impressions are made, two on the check, one on the voucher and one on the cardboard, and one may also be made on the copy for voucher.

The checks are numbered at the time they are to be signed and mailed, from 1 up, irrespective of the bank on


BLANK CORPORATION
GENERAL OFFICES
20 MAIN STREET, BROOKLYN, N.Y.

AUDITED VO. NO.______

CHECK NO.______

DATE: ______

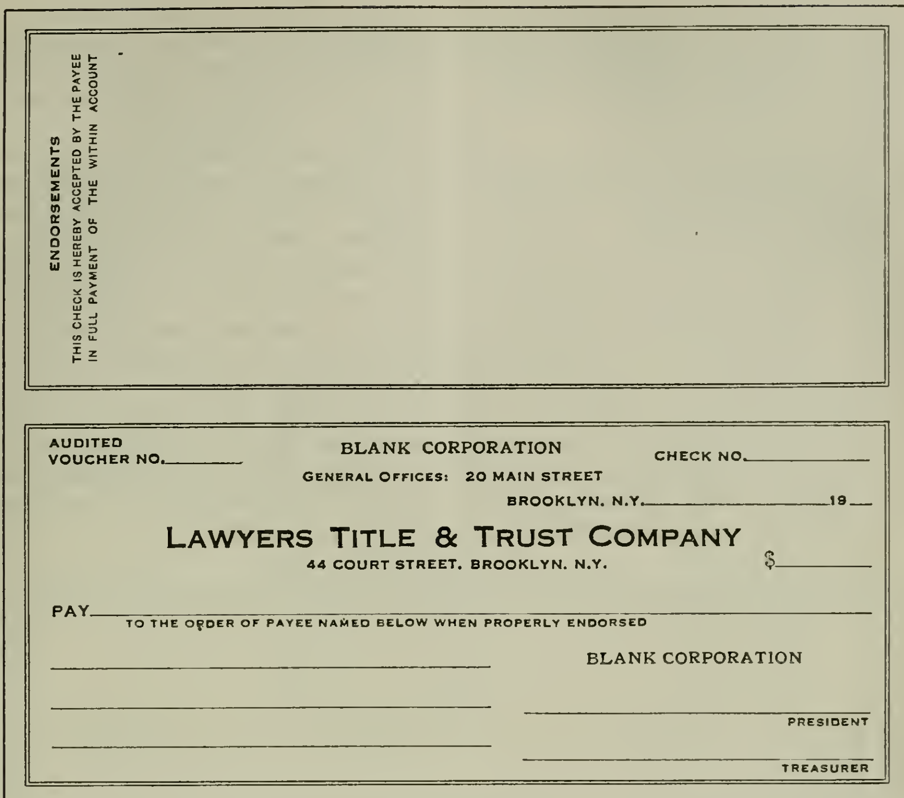
TO______

BANK: ______

DATE OF INVOICE 19__	ITEM	AMOUNT	TOTAL AMOUNT OF CHECK

EXT. CHECKED ______ ENTERED ______ EXAMINED ______ AUDITOR

Figure 3



ENDORSEMENTS

THIS CHECK IS HEREBY ACCEPTED BY THE PAYEE IN FULL PAYMENT OF THE WITHIN ACCOUNT

AUDITED VOUCHER NO.______ BLANK CORPORATION CHECK NO.______

GENERAL OFFICES: 20 MAIN STREET

BROOKLYN, N.Y.______19__

LAWYERS TITLE & TRUST COMPANY

44 COURT STREET, BROOKLYN, N.Y. $______

PAY______

TO THE ORDER OF PAYEE NAMED BELOW WHEN PROPERLY ENDORSED

BLANK CORPORATION

PRESIDENT

TREASURER

Figure 4

which they are drawn. A numbering machine will be found convenient for numbering the checks and will always be ready for the next check.

As soon as the vouchers are written and numbered, they are entered on a record of audited vouchers, Figure 10. One or more sheets of the record of audited vouchers are used daily so that a new sheet is started each morning. The same form marked "Summary" shows the daily totals so that at any time during the month the total amount of vouchers to date can be ascertained. The total of the summary, of course, at the end of the month will be the amount that will be posted to the credit of vouchers payable in the general ledger. These records of audited vouchers are kept in a post binder during the year and are then bound so that each year is complete in itself.

It is not necessary to keep an accounts payable ledger under this system. It is, however, necessary to keep an index of the vouchers. Probably the best way to keep such an index is on cards 5 x 8. These cards should be ruled with three sets of four columns on each side, the columns to be headed: "Date of Inv." "Amount of Invoice" "Total Amount of Check," and "Audited Vo. No." By this arrangement all invoice dates and amounts appear on the card, so that if by chance a duplicate of an invoice already vouchered should come through, it could be detected at once by the clerk making the entry on the card. The cards are, of course, arranged on the top of the

face side for name and address of vendor, and as it is advisable to start a new set of cards each year, the year would also appear on the top of the face.

From the distribution of each voucher, postings are made to pages in a loose-leaf binder with a ring effect so that it will open flat. The sheets will be arranged in alphabetical order, a rather heavy piece of paper being placed at the beginning of each letter with a small extended tap showing the letter. There are various rulings used for the loose-leaf binder, some of which are shown in Figures 11, 12, 13, 14, 15, 16, and 17. You will notice that there is an extension on Figures 11, 12, 15, 16, and 17. This extension is cut away so as to leave just one-half inch showing. On this one-half inch is abbreviated the name of the account so that, for instance, when the Index "C" is turned over, all of the accounts under "C" will be in view.

Under the distribution on the various vouchers we may occasionally find credits. These credits are, for convenience, shown in red ink. A credit may arise, for instance, where freight has been paid on a shipment and charged to factory expense freight, it being later determined that the delivery was to be made F. O. B. factory, in which case, say that the vendors bill was $10 and the freight was $1, the distribution would probably read: "Stores Raw Material," (providing such item is covered by the invoice) in

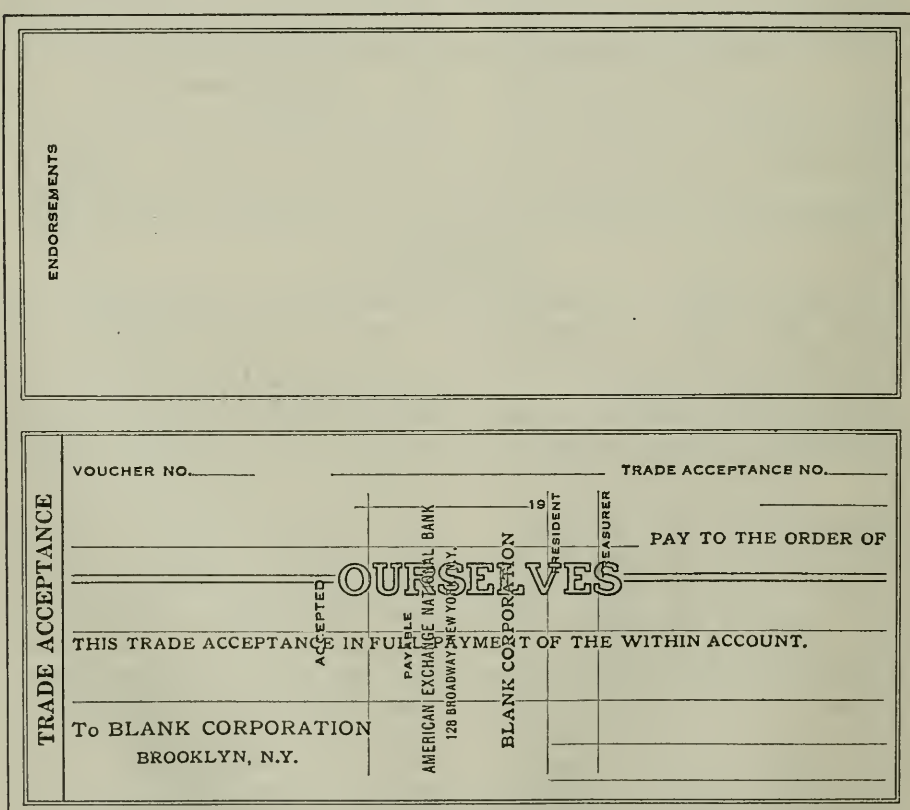
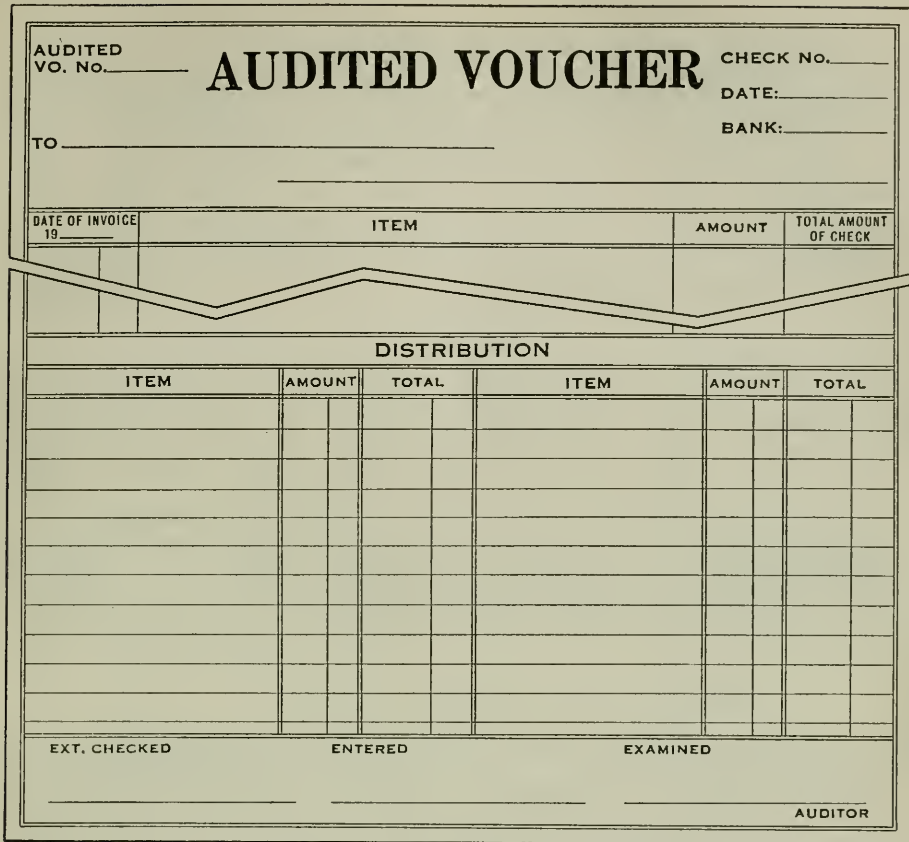


Figure 5


AUDITED VO. No.______ **AUDITED VOUCHER** CHECK No.______ DATE:______ BANK:______

TO ______

DATE OF INVOICE 19___	ITEM	AMOUNT	TOTAL AMOUNT OF CHECK

DISTRIBUTION

ITEM	AMOUNT	TOTAL	ITEM	AMOUNT	TOTAL

EXT. CHECKED ______ ENTERED ______ EXAMINED ______ AUDITOR

FIGURE 6

black ink, $10 and "Factory Expense Freight," in red ink, $1.

Where the items are of a common nature, such as stores, they are posted to a form ruled as shown in Figure 11. This form will permit a large number of entries, the debits all being entered in black and the credits in red. At the end of the month a footing is made. (This footing may also be made at any time during the month in order to prove the entries to such period.) All of the footings on the various pages would necessarily total the summary in the record of audited vouchers. These totals are then ruled off and posted to their respective accounts in the general ledger. The next month posting is started immediately following the totals on the various sheets. Frequently one sheet will answer for an account during an entire year. For certain accounts, however, three or four sheets may be required.

Where items are of such a nature that detail is needed, Figure 12 is used. This form would be used for accounts receivable. Refunds made by check would be posted by entering name and address of customer. All items on this sheet, with the exception of total sales and the like, would be posted to the respective accounts in the accounts receivable ledgers, and the total of all items as shown by the footing at the end of the month would be posted to

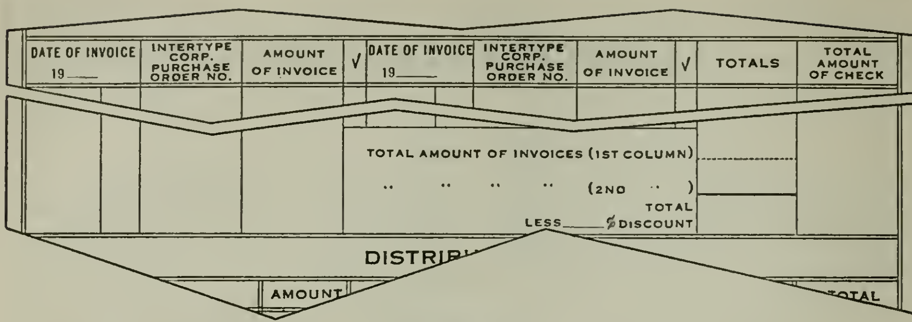


Figure 7

the Accounts Receivable account in the general ledger. Figure 12 would also be used for the "Reserve for Taxes" account, so as to show in detail all payments made and charged to this account during the period.

For such accounts as "General Expense," "Selling Expense," "Factory Expense," and the like, Figure 13 would be used. For instance, in drawing a check for reimbursement of the petty cash fund, we might have the following entered under distribution on the voucher:

	Item	*Amount*	*Total*
General	Expense		$32.50
	Postage	$10.00	
	Sundries	5.00	
	Suppers	7.50	
	Supplies	10.00	
Factory	Expense		20.00
	Freight	10.00	
	Postage	10.00	
			$52.50

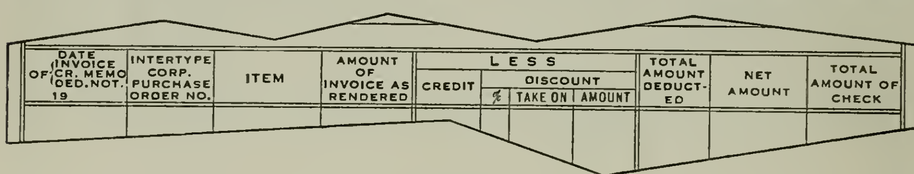


Figure 8

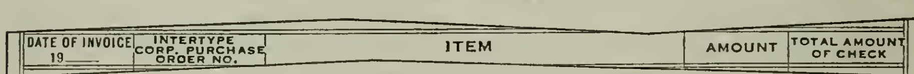


Figure 9

In such a case we would post the $32.50 to the form, Figure 13, and would then open sheets (Figure 15) for the items postage, sundries, supplies, and suppers, and post the various amounts to the respective sheets. In other words, the latter sheets would show the distribution of general expense. Only the total on the control sheet, however, would be posted to the general ledger. The distribution on the other sheets, which by the way should be of a different color, would be used to make up the reports. These sheets would always total to the control sheet. These distribution sheets are cut at the right as stated above and the item covered shown on the margin.

Where there are many items of distribution under a control account, the control sheet as well as the distribution sheets are kept in a separate binder. Under factory expense there may be fifty or one hundred items of distribu-

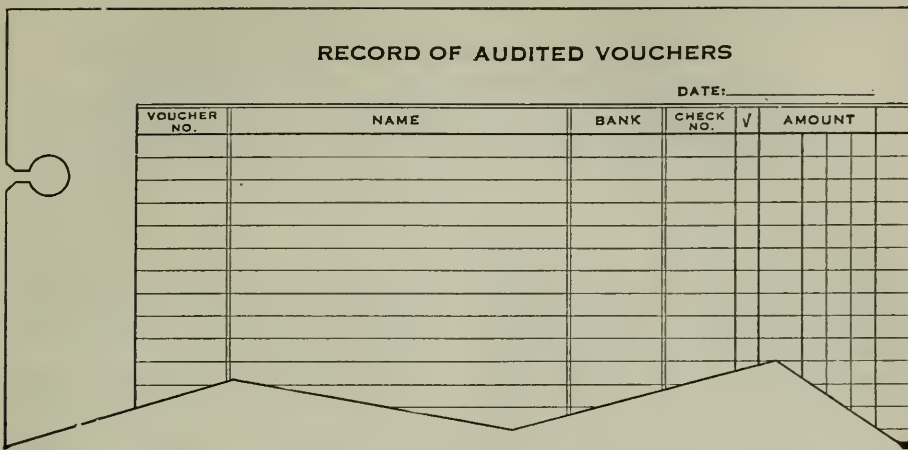


FIGURE 10

tion. Frequently the items of distribution are known by number as well as name.

Sometimes, as in the case of salary, a second distribution is of service.

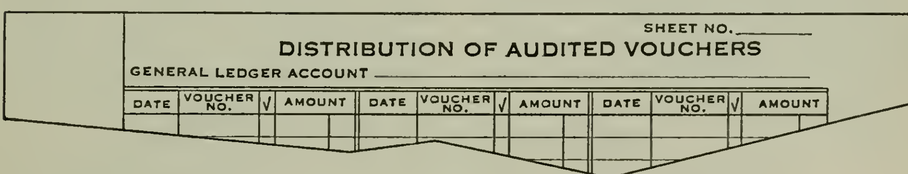


FIGURE 11

In such a case a second subdistribution sheet, Figure 17, is used.

In cases where there are only a few items of detail Figure 16 may be used. Figure 14 is similar to Figure 17, only here we have certain names printed.

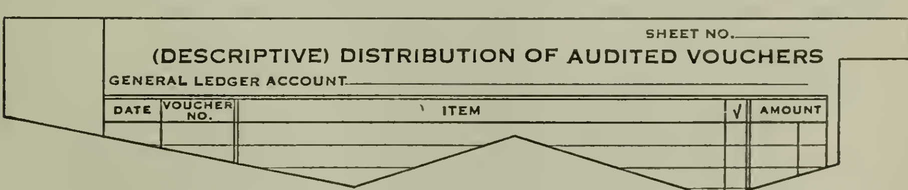


FIGURE 12

When the checks are numbered and signed, they are entered on a loose-leaf sheet of the bank register (Figure 18). The total amount of the voucher is entered in "Vouchers Payable" column, the discount, if any, in the "Discount" column and the amount of the check in the column headed with the name of the bank on which it is drawn.

This bank register takes the place of a check stub and payment cash-book. One or more sheets are used each day, a new sheet being started daily.

Probably a good way to handle trade acceptances, especially if there were many of them, would be to have a column headed "Trade Acceptances" in the bank register and then post the total of the column at the end of the

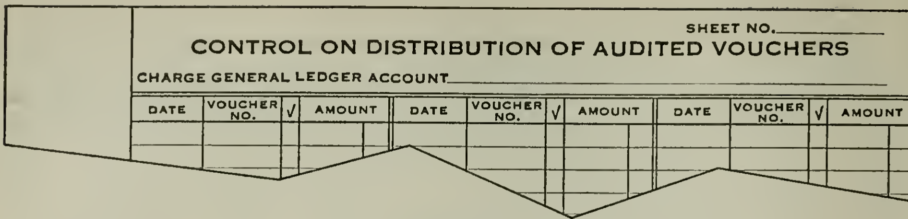


Figure 13

month to the credit of an account in the general ledger headed "Trade Acceptances Payable." It would then be necessary to make another entry when the trade acceptance became due and was paid by the bank, so as to debit the account "Trade Acceptances Payable" and credit the bank where the trade acceptance was paid. Where there are not many trade acceptances, it is probably just as well to hold them on the side, considering them as vouchers payable, until the day on which they become due and then on such day write them into the bank register in

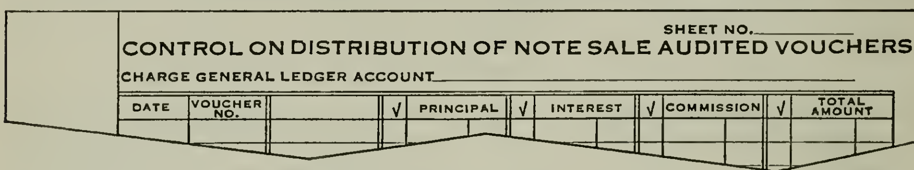


Figure 14

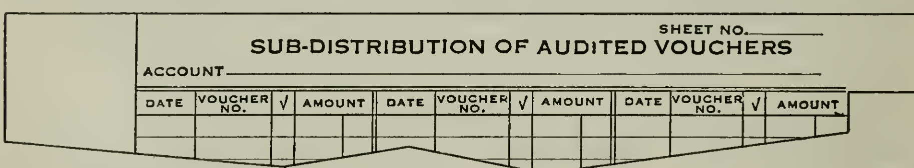


Figure 15

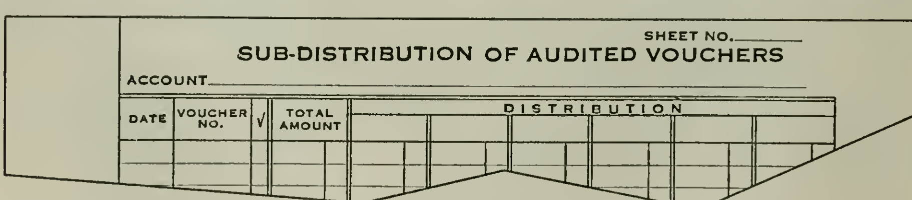


Figure 16

the same manner as the checks are entered, extending the amount into the proper bank column.

Where there are a number of active banks, it would be well to have a sheet ruled the same as Figure 18, ending, however, with the column headed "Discount." This sheet would then be supported with a number of sheets, one for each bank. The amount of the check would then be posted to the proper supporting sheet, the total of the supporting sheets always totaling to the amount of the "Vouchers Payable" column less the "Discount" column.

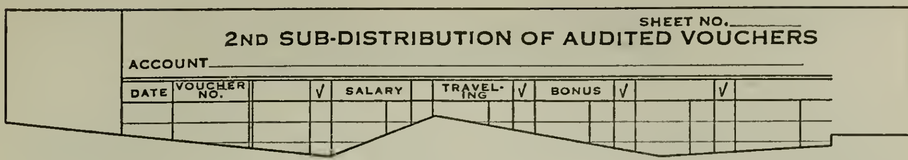


FIGURE 17

This arrangement would make it more compact and more elastic.

There is a column in the receipt cash-book headed "Vouchers Payable." In this column are entered all items except those (such as accounts receivable, discounts allowed, etc.) of enough importance in the particular business to require a separate column. Items that might be entered in this column would be refund of freight or express, telephone money collected, amounts overdrawn on pay-roll, returns of traveling advances, etc. At the end of the month the column is analyzed and a voucher made in red ink. This voucher is entered in the record of audited vouchers, and in the usual way posted to the respective distribution of audited voucher sheets.

In preparing data for a journal entry, it is well to have a form as is shown in Figure 19. These forms may be filled out at the factory, branch office, credit department, etc. In some instances they will be supported by letters from customers or by interdepartment letters, etc. The journal entry is then typewritten on Figure 20. This form is written in duplicate. The original (the left-hand margin having been separated at the dotted line) together with the "Copy for Journal Voucher," as well as any supporting data, is fastened to a cardboard just as is the audited voucher.

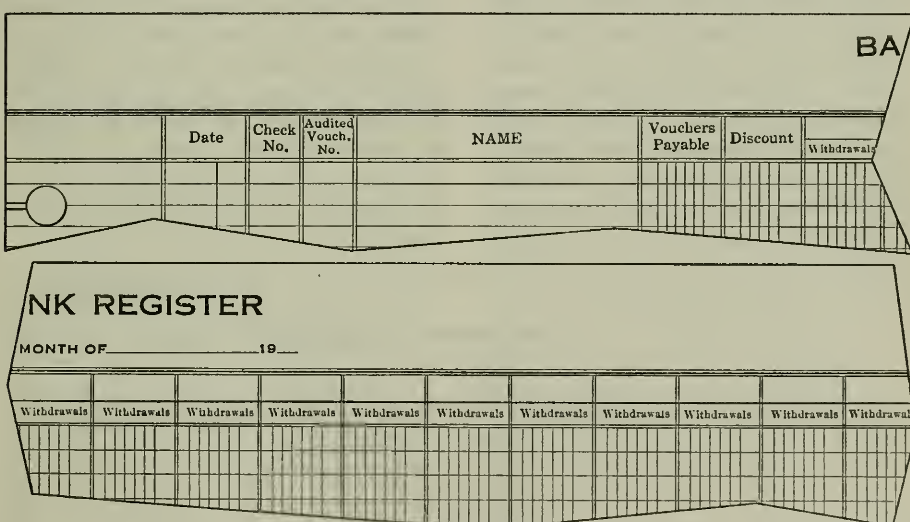


FIGURE 18

The duplicate is not printed with the dotted line and is filed in a post binder. On account of the space required to file the original with the supporting data attached, the duplicate is put in a binder to be kept in the safe.

The items on the journal vouchers are posted to the distribution of audited

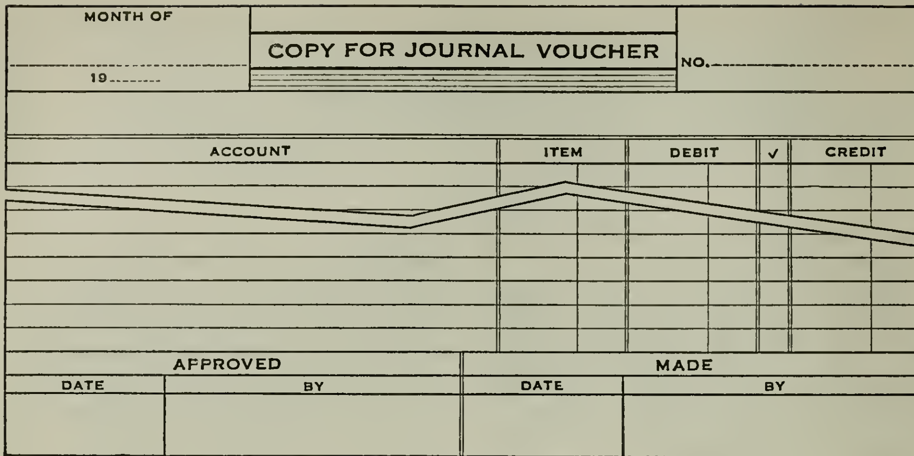


Figure 19

vouchers sheets in the same way that the items under "Distribution" on the vouchers are posted. The debits are posted in black and the credits in red. A "J" is placed before the journal voucher number to distinguish the entry from the regular voucher entries.

When all of the data for the month have been entered in the various records, the only items that will be posted to the general ledger are the totals of a few columns in the receipt cash-book (these may be journalized) the totals of a few columns in the bank register book (these may also be journalized) the total amount of vouchers payable as shown by the record of audited vouchers, and the various totals in the distribution of audited vouchers binder.

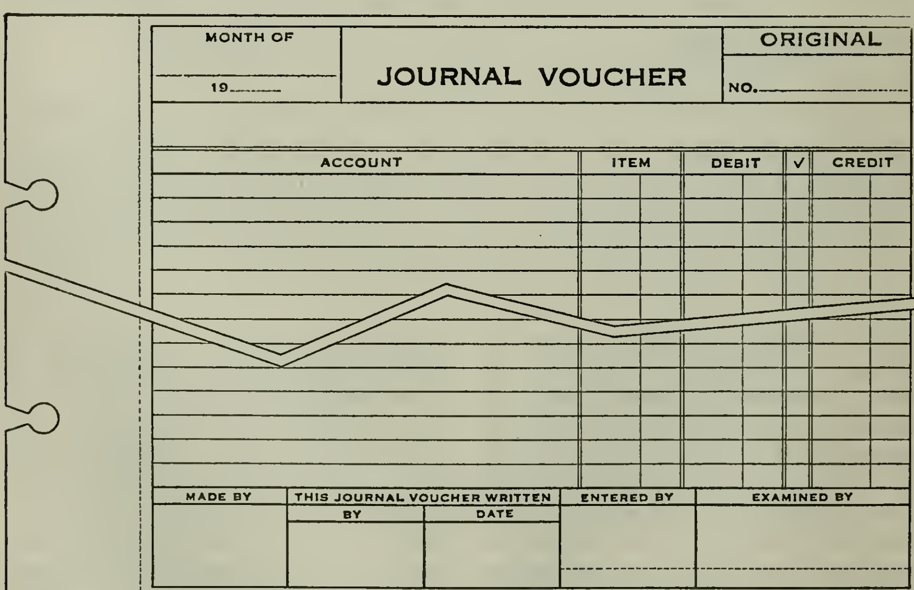


Figure 20

OUR APPROACHING "UNFAVORABLE" BALANCE OF TRADE

BY AVARD L. BISHOP*

IN the minds of most Americans who have ever given any thought to the matter the expression, "balance of trade," suggests a certain relationship between the exports and imports of a country. If, for a given period, the exports of merchandise exceed the imports of merchandise, the country in question is said to have a favorable trade balance; but, on the other hand, if the imports of merchandise exceed the exports of merchandise, the balance of trade is said to be unfavorable. That is about as far as the average individual pursues the question. If, by chance, any further consideration is given, it is likely to be assumed that an excess of exports is, in some way which he does not bother to follow through in his thinking, an indication of national prosperity for the country that is fortunate enough to be in this position, and that an excess of imports either indicates immediate adversity or foreshadows it as being near at hand.

It is unquestionably true, however, that no such general conclusion may properly be drawn from a mere inspection of the comparative purchases and sales of merchandise by a country in its foreign trade. The most that can be said, with any approach to accuracy, is that, as a general proposition, the younger countries which have borrowed liberally from abroad for the purpose of laying the foundations for their later material development and which are still in the situation of a debtor nation are the ones most likely to show an excess of exports; and that the older countries which already have passed through these initial stages of development and which have accumulated considerable surplus capital that has been loaned to the younger nations, are the ones most likely to show an excess of imports. The truth is that in the foreign-trading balance sheets of nations there are, in addition to the visible items of merchandise passing in or out of the countries, a number of invisible items that require very careful analysis, if the nature of the balance of trade is properly to be understood.

At no previous time in the history of this country has it been more essential than it is at present that there should be a full understanding of the nature and function of these invisible items, in order that there may be clear thinking as to the proper paths to pursue in matters pertaining to our international commercial policy. This is no time for wrong steps to be taken. A marked change in our foreign trade balance is apparently approaching, for the signs point to a probable reversal in the near future whereby our imports will exceed our exports. This change will necessitate some readjustments of our ideas in trade matters because, for a period of nearly fifty years, the United States has experienced a favorable balance of trade—a situation which many have assumed as being vitally necessary to our national welfare. It may be said, however, with full assurance, that there need be no cause for alarm because of the probable overturn of our trade balance.

Our ideas regarding the supposed advantages accruing to a nation in

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having a favorable balance of trade may be traced back to the commercial doctrines which were almost universally in vogue as the basis of trade policy in the seventeenth and eighteenth centuries. Mercantilism was then the commercial policy believed in as capable of bringing prosperity. Its doctrines were as stoutly supported by its adherents as is protectionism or free trade in our day. There were many different aspects of mercantilism, one of which related to the precious metals. The mercantilists stressed to the greatest extreme the importance of gold and silver as fundamental factors in national welfare; no stone was left unturned in their efforts to increase the gold and silver within the country.

In the light of the economic conditions which existed in the western world in the seventeenth and eighteenth centuries, the ideas of the mercantilists were not so entirely absurd after all. These were the times before the world's industries had been enlivened by the great changes initiated by the Industrial Revolution, before that great material development which characterized the progress of the nations in the nineteenth century.

The Industrial Revolution and the changes which it effected gave men a broader vision, a fuller appreciation of relative values, than had been possible in an earlier age. Accordingly, a new idea of the wealth of nations was evolved which did not stress as before the importance of gold and silver but which brought into the foreground other factors, hitherto but little appreciated, as the foundations of national wealth. The natural resources of a country in agricultural lands, in mines, in forests, the industries based upon these resources, and an energetic and virile population were now seen to constitute the real basis of the wealth of a country. Once men's minds had caught the idea of the wonderful possibilities involved in the development of the world's material resources, the telling unit for the accomplishment of this development was land plus man; scarcely any limit might be placed upon the possibilities of wealth creation, when human energy was applied intelligently to the earth's resources.

It should also be held in mind, in an attempt to understand why the mercantilists stressed the importance of gold and silver in national welfare, that credit, as we understand it today, played little or no part at all in the world's business transactions. Hard cash was therefore in demand for making payments, and great discomfort and inconvenience might be suffered if the necessary supply were not forthcoming. There is little wonder, therefore, that it was looked upon as a bulwark of national strength. The more specie a nation had at its command, the stronger it would be in peace and war, so it was believed. Consequently, every expedient was resorted to, including legislation, in order that the nation's exports might exceed the imports by a considerable margin, and that the favorable balance might be settled in gold. This would weaken the nation required to make the payment, it was argued, just as it would strengthen the recipient of the specie.

But we have outgrown the ideas of mercantilism as a prosperity policy for a commercial nation, at least most of us have. We have adopted the more rational idea that trade is reciprocal, and that it benefits the buyer and seller alike. In the long run, goods are paid for in goods, to the benefit of both parties to the transaction. The leading thinkers on the subject of national commercial policy are in rather general agreement that the great benefit to a country in exporting some of its products does not lie in the hope or pros-

pect of getting specie in return for storing away in its citizens' strong boxes, but in furnishing the purchasing power for securing from other nations their own distinctive products. No country is entirely sufficient unto itself. Even a country as large as the United States with its incomparable natural resources is limited by climate and other fundamental environmental factors with respect to the kinds of goods that it can produce. It requires but a moment's reflection to appreciate the fact that differences in soil, climate, natural resources, and national aptitudes for doing things have a profound influence upon the kinds and qualities of goods which different peoples can economically produce. Some have a comparative advantage over us in the production of certain goods; to take an extreme case or two, we cannot turn out on a commercial scale certain tropical products which are in strong demand in this country, nor can we supply locally our demand for Artic furs. On the other hand, however, we have comparative advantages over other peoples in the production of a very large number of the staple products of the temperate zone. It is mutually beneficial for each country to specialize in the production of those things for which it has comparative advantages over other countries, and to effect exchanges, the one with the other. To be more specific, it is beneficial for us to exchange our goods with those of other peoples, for our citizens, in consuming the products of foreign lands which are different from our own products, have their lives made the more comfortable and happy.

This bilateral or reciprocal viewpoint of foreign trade, in its practical applications, meets with objections. There are certain apprehensions which arise from national competition, so that the people from each country are likely to overemphasize the dangers which appear to threaten their industries because of the competition, actual or potential, of other countries. This is likely to prompt them to center their attention upon exporting, and to overlook the necessity of importing as well. In the United States, the emphasis has been placed for so long a time upon the desirability of promoting the export trade that, in order to meet the new situation in our international commercial relations resulting from the war, it is going to require a considerable readjustment of our views regarding foreign trade to accept the ground that the import trade should now be promoted.

Almost anyone will admit without argument that the selling of our products in foreign countries is a good thing for American business, that it makes towards national welfare. So important does the export trade appear to our business men and to our legislators, that we have, for some time, been endeavoring to further its expansion. National organizations and governmental machinery have been devised for the accomplishment of this end. All such efforts are in favor; seldom, if ever, is a voice raised in protest, so important to the national welfare is the export trade regarded as compared with either the domestic or the import trade.

With reference to the import trade of our country, there has been in the past, either abject indifference or efforts have been made to make the importation of many classes of foreign goods either extremely difficult or entirely impossible. On the whole, this is doubtless an unfortunate state of affairs, for the attitude is based upon a misconception of international trade; it overlooks the fundamental factor in commercial dealings, namely, that they are reciprocal relationships. One thing that must be driven home to the minds

of our leaders in world affairs is that, if we are going to be able to continue to sell our own goods liberally to the rest of the world, we must be willing to buy the products of other lands in return. The sooner this simple fact is fully appreciated, the better it will be for all.

There is reason for believing that a change in sentiment is developing in this country regarding the function of imports in our national economic life. Some of the outstanding men in the world of affairs and of business relationships are expressing their views on this matter in a way which leaves no doubt as to their present attitude. Thomas W. Lamont writes interestingly on the subject in a recent article on "Taxation, the Tariff, and Foreign Trade Relations," and in substantiation of his views quotes from well-known authorities. George E. Roberts of the National City Bank of New York, in his address delivered at the Seventh National Foreign Trade Convention, in May, 1920, chose as his subject "The Function of Imports in Our Foreign Trade," and spoke with no uncertain sound of the necessity of buying from abroad, if our export trade is to be properly sustained. The same general feeling is expressed by Lewis E. Pierson of the Irving National Bank, New York, in a recent magazine article. It seems only fair to conclude that these statements are indicative of a changing sentiment in this country regarding the function of the import trade in our national life.

The pressing necessity of the adoption of a more liberal attitude towards the import trade and of a fuller appreciation of the reciprocal nature of commerce arises from certain fundamental changes in our international relationships, particularly in our capital and interest account, which were brought about by the Great War. For a long time previous to the beginning of that catastrophe, we had been a debtor nation, borrowing liberally from abroad. A number of estimates have been made of the value of American securities held by foreigners in 1914; they run between four and five billions of dollars. Of course, we ourselves had made some investments in foreign countries, but our borrowings far exceeded our lendings, so that the net amount payable by us to foreigners on account of interest approximated $160,000,000 a year.

By the time of the armistice, however, the situation had been reversed; the capital and interest account had been entirely transformed. Instead of being an outstanding debtor nation, we had become a lending nation second only to Great Britain. This transformation was accomplished, mainly, by buying back from foreigners our own securities to the value of something like $2,000,000,000; by private flotations of foreign loans in this country to the amount of approximately $1,500,000,000; and by our government establishing credits in the United States in favor of the Allies to the enormous sum of $7,000,000,000 more. The sum of these items was in the neighborhood of $11,000,000,000. Here was, as we have stated, a complete reversal of the capital account of the nation. And, instead of a net sum of about $160,000,000 being due the peoples of other countries annually on the interest account, there was due us the sum of over $500,000,000 a year from abroad in the form of interest. Since the armistice, conditions have so changed that this sum has been increased so that in the course of a year or two more it will exceed $700,000,000 although, according to present plans, the payment of the interest as due is not being made, but it has been suspended (or is being refunded) until 1923.

What effect, if any, is this and other changes brought about by the war

ultimately going to have upon our balance of trade? In order to shed light upon this question, it is necessary to enter into an explanation of certain items in the nation's foreign-trading balance sheet. Earlier in this paper reference was made to the fact that the balance sheet contains, in addition to the well-known merchandise items, certain invisible items which perform a very important function. Let us now see what some of these are, for the nature of these items, whether they represent debits or credits, whether they are large or small, whether they are more or less constant or are fluctuating, influences the balance of trade one way or the other.

First of all, foreign investments need to be reckoned with, for they are capable of profoundly affecting the trade balance. We are all familiar with the idea that land, labor, and capital are essential factors in the production of wealth. Well, in America, we had land in abundance, and of varying kinds. The large immigration resulted in putting at our disposal the necessary labor supply. Like all young nations, however, we were poor in capital so necessary for a rapid material development. But our future was full of promise, so that European capitalists, actuated of course by self-interest, loaned to us liberally of their surplus capital that our industries might expand. This made us a debtor nation, and thus we continued to be until the outbreak of the Great War. The effect of such international borrowings upon the foreign trade of a country may easily be perceived. If we assume for the moment that there are no other invisible factors affecting the balance sheet, and that only two countries are involved, the one which has borrowed from the other will export more goods than it imports, to the amount of the interest on the foreign capital which it has borrowed. On the other hand, the one which has loaned will import goods to a greater value than that of the exports, to the amount of the interest on its foreign investments. This principle is finding application continually in international trade. It should be remembered, however, that in the years when the principal is being loaned the debtor country will likely show an excess of imports, for it is not cash that is loaned but capital goods. These are brought into the debtor country and temporarily go to swell the imports, just as the later interest payments tend to swell the exports.

Other invisible factors which affect the balance sheet are the earnings of the merchant marine, expenditures by tourists and other travelers, remittances sent from one country to another, especially to relatives and friends, insurance premiums, and bankers' commissions earned on international business, and so on.

If a country possesses a merchant marine large enough to carry its own trade as well as a goodly share of that of other countries, it is obvious that the citizens of the country having the large merchant fleet will accumulate large sums to their credit in foreign countries on account of the transportation of freight. Such payments are not usually transmitted in cash but, as in the case of the interest payments, they are made in goods which figure in the imports of the country in question. It may be said in passing that one of the reasons why Great Britain has had a large annual excess of imports over exports for so long a time is because of the large earnings of her merchant marine in the foreign carrying trade. Another factor of importance in the same connection is the substantial earnings of the tremendous sums invested by Englishmen in foreign countries. The unfavorable balance of trade for Great Britain

has meant for her not adversity and poverty but prosperity and wealth.

At times, the expenditures in foreign countries by tourists and other travelers have been an important factor in the trade balance. For several decades before the war, American tourists spent in the aggregate huge sums abroad. Also, travelers in this country from foreign parts made large expenditures. Some years ago it was estimated by an authority that the balance payable by the United States annually to cover tourists' expenditures was about $170,000,000. As related to the trade balance, this means that the larger the sums spent abroad by our tourists, the greater will be the shipments of merchandise from this country on account of this single item in the balance sheet. In a similar way, other invisible items in the international trade balance affect the balance in one direction or the other.

II

From the very beginnings of our existence as a separate nation down until 1874, excepting a short period from 1838 to 1848, the balance of trade was against us; imports of merchandise exceeded the exports. The situation which gave rise to this condition of affairs varied at different times and is entirely too complicated to be explained satisfactorily here. On the whole, however, it can be said with an approach to accuracy that, during a large part of this period, we were borrowing liberally from abroad for the construction of transportation works, and for the general material upbuilding of the nation; we were getting ready for that marvelous material expansion which was soon to come and which was the wonder of the civilized world. The borrowings tended, of course, to swell the imports over exports, just as the interest payments would have the opposite effect. Down until 1837, the leading factor enabling us to settle our unfavorable balance was the earnings abroad of our relatively large merchant marine. These were the days when our vessels were found on all the seas, when the ships in the foreign carrying trade were plentiful enough to carry not only the greater share of our own goods but when large credits were accumulated in foreign countries by our vessels on account of carrying foreign freight. After the Civil War, the merchant marine suffered a great decline so it ceased thereafter to be a credit factor in our international account, and became a debtor factor. After the discovery of gold in California in 1850, the exports of this metal greatly helped to offset our unfavorable trade balance.

In 1874, we entered upon a long period of a favorable balance of trade, which condition has existed until the present time. The great material expansion of the country soon enabled us to supply not only the larger share of the domestic market but also to produce a considerable amount for the export trade. Foodstuffs and raw materials took the lead but they were forced in time to yield first place to manufactured goods. Interest due in foreign countries, tourists' expenditures, shipping charges earned from us by foreigners, remittances of immigrants, and so on, all contributed, more or less, towards swelling the exports. Thus was piled up the large favorable trade balance which, for the two decades preceding 1914, averaged not far from $500,000,000 a year.

The great commercial upheaval precipitated by the outbreak of the war had resulted, by the time of the armistice, in far-reaching changes and adjustments. During this time, however, the balance of trade in our favor was not only maintained but it grew to larger proportions than had ever be-

fore even been dreamed of. In the meantime, the capital and interest account had been completely transformed; instead of having to pay to other countries a net annual balance of $160,000,000 on account of interest alone, as had been the case before 1914, we had a net balance of interest in our favor, as previously stated, of about $500,000,000 a year and, since 1918, the sum has increased. Were there no other invisible factors to be reckoned with, it would be reasonable to expect that soon our imports would exceed our exports to the amount of the interest. As matters now actually stand, however, there are other factors to be taken into consideration, besides, the funding of the interest payments until 1923 will result in the imports not being increased until after that date because of the interest account. During the war and later the American Merchant Marine in the foreign carrying trade has taken on new life; but in spite of its great growth during the war we were indebted to other countries, on the whole, on the freight account. Whether or not the revival is destined to be permanent, it is impossible to tell. Consequently, there is no way of predicting at present as to the part the merchant marine is to play in the future in our foreign trade balance.

Sooner or later, the permanent changes which have occurred in our industrial and commercial relations with the rest of the world, as a result of the war, are bound to be reflected in our trade balance. The reversal of our position from that of a great borrower to that of a great lender will affect seriously, in the long run, the relative movements of merchandise shipments in and out of the country. The keenest students of the subject are in rather general agreement that ultimately the favorable balance of trade which this country has had for nearly five decades will be replaced by an unfavorable balance. The situation is a complicated one and the factors involved are so difficult to evaluate that it is impossible to foresee just when the change is likely to take place.

Should American loans be increased in Europe and extended elsewhere, as in all probability will be the case, this would tend to swell our exports during the time when the loans were being made. Immigrants are likely to continue to remit abroad, and tourist travel seems destined to be resumed on a large scale. These activities will tend to enlarge the export trade to a greater or less degree. On the other hand, if more capital is invested abroad, if the German indemnity stands as arranged, and if war debts are not canceled, the increasing interest payments are pretty sure to exceed the remittances and other debtor items and lead to an excess of imports. A substantial increase of imports is inevitable if our export trade is to be sustained on a large scale; for we must be willing to buy from abroad if we wish to maintain and extend still further our sales abroad. And we must be willing to buy still more if we are going to make it possible for the countries that have borrowed from us to make their interest payments. When the time comes, as it likely will within a very few years, that our imports equal or exceed our exports, there need be no cause for alarm. Such a change is to be expected in the natural course of events. In the meantime, it will be indeed unfortunate if any serious attempts are made to impose artificial devices for the purpose of making it more difficult than at present for foreign goods to enter our markets because of an unwarranted belief that imports must be kept below exports in order to regain and preserve the welfare and prosperity of the nation.

DETERMINING THE PURCHASING POLICY

BY ARTHUR E. SWANSON*

PURCHASING policies are rules of action established to govern the purchasing phase of the business. No general rules can be laid down as applicable to business in general; in each business the management must formulate its own rules. The management has in mind certain purposes that it wishes to accomplish, and it establishes such rules or policies as, in its opinion, will obtain those objectives. Determining policies is therefore a matter of judgment; and policies will ordinarily be effective, harmful, or indifferent as the judgment of the management is sound or otherwise. The value of study of considerations that affect purchasing policies is accordingly proportionate to the extent that it broadens and improves the judgment.

In a business of appreciable size, matters to be considered in determining a purchasing policy are very numerous and complex. Some of the more important considerations are:

1. Value of continuous and adequate source of supply.
2. Value of friendly attitude on part of supply houses.
3. Need of credit leniency or extensions.
4. Trend of business conditions.
5. Desirability or necessity of long-time or short-time contracts and feasibility of sliding scale contracts.
6. Buying futures and hedging.
7. Speculation.
8. Control by budget and production schedule.
9. Fluctuation of the market.
10. Buying against specifications.
11. Desirability of requiring competitive bids.
12. Need of buying from brokers.
13. Buying through subsidiaries.
14. Relative importance of price or service.
15. Credit of supply houses.
16. Methods of supply houses.
17. Deferments and cancellations.
18. Influence of sales policy on purchasing policy.

II

These points will all be taken up in turn and their more important phases and implications discussed.

1. The importance of maintaining a continuous and adequate source of supply depends, to a large extent, on business conditions. When the supply of raw materials is very plentiful, as in periods of depression, this consideration is not so significant as in periods of great activity. Ordinarily, however, a large business must carefully consider the problem of continuity and adequacy of its supply of materials. The majority of purchases must accordingly be confined to a limited number of sources, so that the favored supply houses will feel under obligation to provide for special demands. On the other hand, the purchases must be distributed over a sufficient number of sources, so that if one source should be suddenly cut off by labor difficulties, fire, financial adversities, and the like, the major portion of the supply will not be endangered, and the substitution of another source will not be made too difficult.

2. The value of a friendly attitude on the part of supply houses should

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not be overlooked. It is frequently possible to drive hard bargains, to take advantage of technicalities, to force supply houses to carry out contracts that have become very disadvantageous to them, and to shop around freely in buying—all of which are legitimate. It is sound policy, however, to deal with supply houses in such a manner as to create a friendly attitude—a willingness on their part to go out of the way to grant a favor; for at times a business needs special favors, such as rush shipments, special designs, etc.

3. The need of credit leniency or extensions is oftentimes not anticipated at the time of organization of the business. It frequently happens that a business, though prosperous, is limited financially. By concentrating purchases with a few supply houses, the amount purchased from each becomes considerable and the supply houses are more likely to work closely with the purchaser and extend more credit to him in times of stringency. Buying from a few houses in order to secure more credit and to insure temporary protection in times of trouble has its disadvantages in that the purchaser is restricted and partially controlled by the supply houses. That is the premium that must be paid for credit services.

4. In the determination of a purchasing policy the trend of general business conditions is a vital factor. A rising price level, particularly if it is accompanied by increasing business activity, makes buying in advance for longer periods than ordinary advantageous in that it gives greater assurance of adequate supply and permits of lower prices by quantity buying without running an undue risk of loss in inventories. The trend of business and the price level must be carefully watched, however, especially if the price level is ascending rapidly. Under such conditions the temptation to buy further and further in advance is exceedingly strong, and a sudden change in the trend may easily force on the business a tremendous loss through price reductions on inventories and goods on contract. This temptation is very subtle and for that reason, hard to resist. Moreover, the difficulty, or threatened difficulty, of securing sufficient materials oftentimes looms so big that it tends to submerge the fact that one is buying far in advance and thus running the risk of making inventories top heavy.

A falling price level has the opposite effect. The possibility of buying goods in the near future at reduced prices, and the ease with which goods can be procured tend toward "hand to mouth" buying. The difficulty which even very experienced and well-trained business men encounter in predicting even approximately the trend of price levels and business activity, has caused many to follow a sort of straddling policy in reference to economic trends. They do not buy very far in advance when the level appears to be on a long upward swing or very close when the level appears to be on a downward swing. They are satisfied with an average buy.

5. The general trend of price levels and business activity is a large factor in determining whether goods should be purchased on long or short-time contracts but not the only one. Frequently the initial cost that a plant incurs in order to manufacture supplies is such a large factor that it can make a marked concession in price if it is assured of continued operation for a definite amount of business. If the purchasing firm wishes to take advantage of such con-

cessions granted on long-time contracts, it should, when the trend of prices is downward, arrange to have prices readjusted each month or at other definite intervals on the basis of a predetermined scale. A contract for cotton fabric, for example, may stipulate a monthly revision of the price based on a change in the rate of wages and provide for a change in the price of cotton from the base rates which obtained when the contract was drawn.

6. Buying futures and hedging to eliminate speculation in buying may be desirable. Sales in a business may be made for future delivery but at fixed prices. It may then be advisable, in fixing a price, to know definitely what the raw material will cost. To illustrate, the cost at the time of accepting the sales contract may be assumed to be $1 per unit; at the time the material will be needed the cost may be $1.50 per unit. A purchase for future delivery is accordingly made at the time the sales contract is accepted, so that the business is protected in case of an increase in cost. If the price falls instead of increasing, the business does not gain thereby. Hedging consequently eliminates the speculative feature.

7. The question of the extent, if any, that purchasing should involve speculation is present in a falling as well as in a rising market. Whether speculating is to be a phase of purchasing policy depends on opinion only. In the main, purchasing departments are not equipped to speculate successfully, and frequently the management is of the opinion that in other respects speculation in the purchasing department is harmful. The purchasing policy should define the management's position in regard to speculation.

8. The type of control of purchases has a very decided influence on policy; budgetary control, which is coming into favor in many enterprises, does so in particular. The sales estimate is used as a basis for establishing the production schedule. This schedule in turn determines the amount of stock required by periods, and the stock requirements govern purchases. Based on the production schedule, a purchasing budget is set up for materials, which gives the limits within which the purchasing department must operate. Such a control restricts the purchasing to the buying of balanced stocks and in that manner affects policy.

9. Markets frequently fluctuate. This may be utilized for purposes of speculation or met in part by hedging. It may be met also by continuous equalized buying as prices ascend and fall so as to realize an average price. This procedure has many advantages as it simplifies the handling of fluctuations and eliminates the temptation to speculate.

10. If specifications are established for the materials to be purchased in order to secure standard materials or to meet technical requirements, the purchasing is affected. Specifications frequently limit the range of sources of supply. Moreover, it makes purchasing a narrower function than when purchasing also involves determination of the quality of goods to be bought. In certain kinds of business, buying cannot be narrowed in this manner because of the factor of human judgment in determining quality. While steel, machinery, and scores of other goods are subject to exact analysis, cloth and other similar goods, although they can be analyzed to a degree, have factors of pattern and style which can be gauged only by personal judgment.

11. In order to provide against favoritism and to encourage competitive bidding, it is often desirable to adopt the rule that specifications must be submitted to a number of supply houses, and that the lowest bidder receive the contract, provided he is otherwise satisfactory. Such rules, of course, have their limitations. They tend to slow up buying and place restraints on the buyer. Moreover, by including in the specifications certain requirements the competitive bidding may be limited.

12. In determining a purchasing policy, the relative advantages and disadvantages of buying from brokers or direct from the supply house must be carefully weighed. Price advantages in buying direct may be so substantial as to warrant so doing even if it means long-time contracts. To confine all buying to direct sources, however, places the business out of touch with the market. To maintain this touch it may be advisable to do some buying from brokers, even if there is a price disadvantage in so doing. A purchasing agent needs to have persons in close touch with the market upon whom he can call at any time for price information. Unless some buying is done from such persons this information in time becomes unavailable. If buying must be in small quantities there may be no price advantage in purchasing direct and buying may be done exclusively through indirect sources.

13. In order to have a satisfactory control over sources of supply, or to secure a lower cost it is sometimes advisable to acquire the sources of supply outright and operate them as subsidiary companies. This process is known as integration and, while it has very distinct advantages, it also has limitations. The greatest limitation is that such sources are ordinarily industries allied to the principal one and are consequently affected in the same manner as the main business by changes in economic conditions.

In the distribution of a number of products, such as building materials, the best prices can often be secured only by regular dealers. Subsidiaries are sometimes organized to serve nominally as dealers but primarily as agencies through which materials are purchased.

14. The purchasing policy is compelled at times to take into consideration the relative importance of price or service. Assuming that certain standards of quality must be met, the purchasing policy may have to emphasize price or service. Ordinarily, of course, both of these factors are emphasized, but when purchasing is balanced very closely with production such factors as promptness in shipping, uniformity in quality, condition of packing, disposal of adjustments and the like may be so important as to warrant a slight increase in price.

15. The financial standing of the supply houses with which a firm deals affects the purchasing policy; for in case the houses have to be paid promptly, no leeway is left open to the purchaser in case of a financial stringency. Furthermore, a large buyer may find that if he acts within his legal rights and suddenly closes down on his purchases, he will financially embarrass the supply house. While this would be altogether legitimate, the management of many concerns would dislike very much to do this and to a limited extent, would be inclined to sacrifice themselves.

16. Methods of management differ; some concerns are slovenly and dilatory in their methods, others tricky. Some have very definite policies which they maintain in fair

and foul weather, others have policies which are trimmed according to the wind that blows. A purchasing policy is not complete which does not consider the methods and policies of supply houses from which goods will be purchased.

17. The question of deferments and cancellations ordinarily does not arise on a big scale except in periods of economic depression. The possibility of deferment and cancellation is, however, too vital a matter to be overlooked in determining a purchasing policy, because periods of depression may find the business without any method of securing relief from the in-rush of goods not needed by the business.

A method of providing for deferment or cancellation is to have the purchasing contracts contain a provision stipulating that the delivery of the purchased goods may be deferred a given period in return for a specific consideration, or that the contract may be canceled in return for a fixed payment. It is ordinarily difficult to get the supply houses to agree to such a provision in the purchasing contracts. It can be done, however, and if confined to the important contracts only, the burden placed on the purchasing department in this respect is not heavy.

There is considerable opposition to deferment or cancellation on the part of many business men but that is directed to deferments or cancellations which are not provided for in contracts, but are forced on the supply house in one way or another. This opposition should not apply when provision for deferment or cancellation is made in the contract.

18. Another factor which may have to receive careful handling in the determination of purchasing policy is the influence which sales policy should be allowed to exert. A business frequently sells its product to houses whose goods may be purchased by it. For example, tire manufacturers sell tires to makers of automobiles, and purchase a large number of automobiles for testing and traffic purposes. In such instances, an automobile manufacturer may press the sales department of a tire manufacturer to exert its influence upon the purchasing agent in order to get him to buy trucks or passenger cars from the former. The purchasing department may wish to standardize on one kind of truck or passenger car in order to have the advantages that come with standardized equipment, but the influence of the sales department may be exceedingly great. Thus comes the question of weighing the advantages of standardization against the need of helping the sales department. The advantage even to the sales department usually lies, however, with standardization. The sales department frequently has so many customers who want to be favored that it cannot possibly please all. It has a much stronger position then if it can show that it has no influence in the purchasing department where considerations of standardized service govern.

These eighteen considerations which have been discussed in somewhat summary fashion do not comprise all the elements which must be considered in determining a business policy but they serve to indicate the many factors that must be given attention. The relative emphasis which should be attached to these considerations cannot be given for business in general, nor can they be given even for the same kinds of business; for the reason that the weighing of these factors depends, in a large measure, on the objective of the management and the condi-

tions under which the business is operated.

In an industry, for example, with which the author is familiar, two competing concerns follow almost diametrically opposite courses relative to speculation. One business has, as a matter of policy, equalized buying whether the market is going up or down. The other follows the policy of trying to forecast the market and buys heavily when, in the opinion of the management, the price is low. There is nothing to indicate that either business should change its policy. The management, in one case, does not feel it is equipped to forecast the market rightly, and believes that it is following a safe course by purchasing regularly regardless of the market. The other believes it is equipped to anticipate the trends and that it can do better by bunching its buying.

Given certain circumstances it would be possible to indicate how a purchasing policy should be affected by some of the considerations mentioned. For example, if a business is limited financially it would be undoubtedly wise to adopt a policy of buying from a limited number of supply houses.

III

A classification of these considerations discussed above should be helpful in arriving at a method of determining the policy to be pursued. In the main, the purchasing policy of a business is not static. On the contrary it is continually evolving. Certain phases of the purchasing policy can remain the same throughout the life of the business; a second group of phases depends on the growth of the business, its financial condition and its policies in reference to production; and a third group depends largely on external economic conditions.

The factors or phases which can remain more or less fixed are: Value of friendly attitude on the part of supply houses; buying against specifications; relative importance of price or service; control by budget and production schedule; desirability of requiring competitive bids; credit of supply houses; and methods of supply houses.

Those which are dependent on the growth of the business and its condition, are: Value of continuous and adequate source of supply; need of credit leniency or extensions; desirability or necessity of long-time or short-time contracts and feasibility of sliding scale contracts; need of buying from brokers; buying through subsidiaries; buying futures and hedging; fluctuation of the market.

Those of the third group which are dependent on external economic conditions are—speculating and trend of business conditions.

The evolutionary character of the purchasing policy makes it desirable that the policy be subjected to review at definite intervals. In a large company the author has found it very practicable to have the purchasing policy reviewed in such a manner once a month by the executive board. As the executive board consists of the heads of the principal divisions of the business, the purchasing policy is being continually moulded in the interest of the various phases of the business. Prior to the meeting, the individual members are supplied with a recent analysis of the fundamental conditions so that the purchasing policy can be shaped in the light of that information.

In a smaller company the responsibility for the review of the purchasing policy lies with the manager,

except so far as it has been delegated to the purchasing agent.

A final consideration relates to the relationship which should exist between the purchasing and the other departments of the business. The establishment of an executive board is an excellent way of integrating the purchasing with the remainder of the organization. In a large or fair-size business, for some reason or other, the purchasing department is frequently connected very loosely with the rest of the organization. This is undoubtedly owing to the fact that when the business starts the buying is done by the proprietor or manager himself, and as the business grows the purchasing becomes a function attached directly to the manager's or proprietor's office without being adequately correlated with the organization as a whole. This rather detached position of the purchasing department emphasizes even more than in the case of other departments the great importance of integration.

An executive board is not, however, the sole agency for establishing closer relationship. This can also be accomplished in part by organizing, in such a manner, that the purchasing department has a definite relation to the financial department, the production department, and the sales department. The establishment of such a relationship between the purchasing department and the other departments of the business through organization is very important in a business too small for the effective operation of an executive board.

The bearing on purchasing policy of this integration of the purchasing with the remainder of the business is fundamental. The purchasing policy should reflect, so far as possible, the needs and requirements of the business as a whole, and that can be done only through organized contact with the different factors of which the business consists.

THE ART OF INVESTMENT

BY MORRELL W. GAINES*

PART I

THE solid fortunes have been amassed through investment rather than made by speculation. They have been built up by men of discipline and will-power. Depth and breadth, through concentration and experience, are demanded, but not exceptional brilliancy.

To invest is to build character. Trusted for their judgment, self-restraint, and foresight, these men are respected for ability to penetrate problems and for energy in applying powers of analysis to practical results. These qualities are prized and open the door to leadership and power.

Investment is as sturdy and straightforward a pursuit as lies in any walk of business. There is no mystery or occult secret. The art of investment lies in learning facts that are within the common reach and in applying principles capable of being assimilated.

In simple form, without elaboration, these articles endeavor to outline main principles. The purpose being to lay a foundation for orderly reasoning with respect to the facts; details that might be thought pertinent and even necessary to a full discussion of investment are quite obviously omitted. For these and other omissions the indulgence of the reader is craved.

Dedicated to the faith that work and intelligence bring results, the articles frankly and boldly espouse active investment, for appreciation of principal as well as for income. Violating in this manner the recognized, and proper canons of trust-fund investment, they are nevertheless, not to be held up to scorn as commending speculation or, in a more disguised manner, approving what is known as semispeculation. Far from it. They counsel labor, and the safe fruits of labor.

The articles, treating of causes and methods of analysis, contain few investment suggestions. Practically the only advice as to specific investments is that the investor must use his brains to meet situations as they arise. The writer believes neither in the classic and dismal science of investing without profit, which is for those already rich, nor in the eager pursuit of profits through speculation, which keeps men poor. Investment is of varying quality, and may be variously defined. The type of investment discussed, a genuine type which may be observed in prominent quarters, is that which depends on knowledge for safety and upon an assiduous skill for profit.

II

One of the deeper aspirations, because it is the foundation for carrying out most other aspirations, is to earn independence. To this purpose stocks and bonds provide means. Securities, taken straightforwardly, embody the essence of the struggle to be one's own master while alive and, when dead, to leave one's family protected from want. At this stage of material civilization they are the principal public door of opportunity, stirring virile minds to action, vivifying ambition, breeding men. The words of James J. Hill are

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true, that a new force is borne into the world when a man has saved his first thousand dollars for investment.

Securities are too much neglected as a purposeful pursuit. They are regarded too lightly. There is much dabbling in stocks and inconsequential gambling; little study and less consecutive effort. Market activities for the business man are held to be tinged with a shade of the disrepute that attaches to speculation. It is, of course, well known that securities, and especially stocks, have been and still are abused by professional gamblers as pawns in a tainted struggle for dishonest wealth. But there is, on the other hand, no sufficiently wide recognition of the fact that securities, taken soberly and seriously, are the head and center of self-made opportunity, to be followed with energy and resolution.

Knowledge of investment in securities is not so easy to disseminate among executives as knowledge of law, medicine, engineering, accountancy, or the elements of business management. It is an art, that must be acquired individually, not a science, whose principles can be formulated and standardized. Success depends largely upon the development of two dissociated if not contrary traits of character, instant and forceful initiative, and deliberate and critical judgment. It is a difficult art. The field is in continuous change. The action is directed not to the known past but always to the unknown future. The investor must grope. He can hardly hope to escape a share of mistakes. It is his problem to resolve the course of coming events clearly enough to make useful decisions, upon indistinct, uncertain, and shifting grounds. The difficulty is not diminished by the temptation from within, to speculate and run great chances for great profits, instead of following minimum risks and more consecutive profits of investment.

There is no clear-charted course. Nevertheless there may be found a rational method of discipline and conduct that will serve. It is as with any other art. The mind must be thoroughly trained to think, reason, and react in terms of investment. Then long and careful practice must bring, step by step, the mastery of detail and technique until, finally, learning and reason are correlated into instinctive decisions. The real difficulty lies in the arduousness of the effort.

Other mental arts face similar problems. In one especially, that of war, the training of the mind to meet the exigencies of an unknown, changeable, and hostile environment, seen darkly through inexact information, has been perfected to an extraordinary degree and on a grand scale. No two arts could be farther apart. Yet the methods and maxims of the one apply with great force to the other.

General Foch, in the "Principles of War" begins by answering incisively those who doubt that an art, especially one so difficult as that of war, can be taught or is capable of being learned save from experience. To those who would still doubt and hesitate he says abruptly, "Of all mistakes, one only is disgraceful, inaction."

There follows, amid the description of battles and campaigns, an illuminating analysis both of problem and of method.

> The unknown is a constant factor in war. All armies have lived and marched in the unknown. The best commanded armies have lived and marched in the unknown, it was inevitable; but they have resisted that dangerous condition, they have come out victorious, by depending on protection which has enabled them to live without danger in an atmosphere full of peril.
>
> The elements of a war problem, to begin with, are only seldom certain, they are

never definite. Everything is in a constant state of change.

One standard alone, that of reason. We wish to reach the field with a trained power of judgment: it only needs to have us begin training it today. Let us for that purpose seek the reason of things; that will show us how to use them. Each one of us must build up his faiths, his beliefs, his knowledge, his muscles. Results will not spring from any sudden revelation of light, as by a stroke of lightning. We can only obtain them through a continual effort at understanding, at assimilation. Thus only do minds stretch in accordance with the study undertaken, principles are absorbed to the extent of becoming the basis of decisions taken. You will be asked to become the brains of an army: I say unto you today—Learn to think.

The same precepts as those just quoted apply to the investor and might have been written of his contrasted field of action. His victory, too, lies within. Self-restrained before hidden dangers, respecting always that which cannot be known, he keeps guard, maintains defense. Enlarging his knowledge, watching the opportunity, he discovers, also, the points of vantage for the attack.

III

It is within the common experience that there are times of activity and prosperity and times of inactivity and depression. It is general knowledge that the cost of living is higher in good times and lower in bad. Wages expand and shrink. Incomes, and to some degree salaries, follow the same trend.

These are elements of business, affecting the profits of industry even more sharply than they alter the earnings of the individual. The course of business is far from uniform. It passes through a sequence of changes which, while it cannot be forecast with accuracy, affords abundant room for study, observation, and understanding. A working knowledge of the state of industry and of the trend toward prosperity or depression is not difficult to attain.

The prices and values of every type of securities, from the slow moving bonds to the volatile, quick-acting stocks, are dependent upon the successive stages of the progress of business. In order to understand investment in securities it is essential to comprehend the fundamentals of the business that has created them and whose earnings pay interest and dividends.

The principal kinds of corporations are those engaged in trade, in manufacture, in mines and oil wells, in specialties such as banking, shipping, storage, moving-pictures, ten-cent stores, etc., and those conducting railroads or other public utilities. To these may be added holding companies, and companies of mixed activities. Stocks and bonds take color, derive character, both from the kind of business and from the kind of corporation. Each business is different. The risks of security holders, and their hopes of profit, vary with the business.

There are two great classes of enterprise, the businesses which sell commodities and those which sell services. The former are controlled by the laws of trade, including the law of supply and demand. The latter are quite generally restricted by statute and regulated by commissions. The price of the product, which may rise or fall freely, is the dominating factor in the prosperity and depression of companies selling commodities. The cost of the expenses, the regulated rates for services being too inelastic, is a more powerful factor with the railroads and public utilities, the service corporations.

The commodity enterprises are those engaged in trade, in manufacture, and in the extractive industries. Of these

the trading, or commercial, companies respond most abruptly to changes in general conditions. The proportion of sales to capital is greatest: the "turnover" of capital most rapid. Trading companies sell quickly what they buy, the rate on the capital depending not so much on high margins of profit as on the number of times a year the capital can be turned. For this reason any change in general conditions is reflected immediately in the operating results.

These companies profit by rising prices. They sell at a higher level than that at which they bought. As a rule they also do a larger volume of trade. Thus the volume of sales, and the margin of profit per unit are both increased. The general prosperity strikes them with redoubled effect.

These companies are adversely affected by declining prices. In spite of every care prices received tend to a lower level than prices paid. Sales decrease and inventories shrink. During depression the "turnover" of the capital is retarded by small sales and slow collections. In addition there is more danger of loss from inability of debtors to pay and, especially when there has been a severe price decline, from cancellations of orders for which purchases have already been made.

The business of merchandising requires not only skill in technique but sound judgment of conditions and safe conservative financing. It is necessarily speculative in some degree, no matter how prudently it may be handled. The condition of trading companies is subject to quick change. During 1920 and 1921 many incurred enormous losses while just previously they had been making immense profits. A very considerable proportion of them would have been found bankrupt, if required at that time to liquidate their debts and pay off their bank loans.

Securities issued by this type of company must necessarily partake of the same speculative quality. As a whole they are better adapted to private capital, under individual initiative, than to public issues of stock and the administrative mechanism of large corporations. They are quite unsuited to the issue of bonds. The Claflin failure is perhaps the best historical illustration of the difficulty investors may find in maintaining contact with the values of the securities. As a rule anyone not in the management can hardly do more than guess at the immediate state of facts, from knowledge of general conditions.

In recent years some of the larger of these companies publish prompt and full statements of earnings. Nevertheless, it must be reflected that whatever is permanent in these companies lies in trade-marks, patents, organization, established trade, and good-will. The capital is invested mainly in inventories and in accounts receivable, both variable assets, which it is hardly possible to follow closely. An investment is to be made more with reference to improvement in trade conditions than as an expression of judgment on the permanent worth of the securities. To this there may be certain exceptions in trades selling at fixed prices, but it is a rule sufficiently well established by the terrific, and very general inventory losses of the recent price transition.

Manufacturing companies, the "industrials" proper, are also very responsive to changes in general conditions. Capital is larger in proportion to sales because it takes longer to make and sell goods than it does merely to sell them, and because also there is an investment in plant as well as in inventory and accounts. The "turnover" of capital is slower and the margin of profit per unit sold is normally higher, than with the trading companies.

The industrials are, it is true, engaged in trade as incidental to their business. They buy raw materials and labor and sell finished product. They have a risk in inventory, which is sometimes very great, and they may experience all of the troubles of trade. On the whole, however, they are less speculative than trading companies because they get paid for the work done in making their own product and because the investment in plant steadies them. Their more usual difficulties come from lack of management, or of maintenance, or of sufficient working capital, pertaining to manufacturing rather than to trade. This class of dangers may be measurably guarded against by the investor who watches the annual reports and the published statements of operations.

Industrials make large sales at high prices when times are good and small sales at low margins above manufacturing costs when times are bad. In a period of price transition the inventories may, of course, require to be worked off below cost, as with the trading companies. Special circumstances such as tariff revisions or new competition may affect manufactures, but as a rule profits follow the trend of general conditions. Steel is by no means the only industrial that is either "prince or pauper," although there are many the consumption of whose product is more constant.

Costs of manufacture are an important item with industrials. The rise in expenses during prosperity is usually compensated for by increase in price. But this is not universally possible and it may sometimes happen that profits during the last year or two of a period of great activity are less than in previous years because of the rise in wages and in other costs.

When depression with its sudden changes of price arrives, the extent of the immediate loss depends on the size of the inventory and the conditions under which it must be worked off. Operations can then be shut down and further losses minimized during the dull period that follows. But, as is natural, this is also a period of little or no profits.

It is difficult to characterize industrial securities as a group. There are many different types and kinds of companies, ranging from those always on the verge of trouble to organizations of splendid efficiency and solidity. The industrial combinations of the opening years of this century were quite generally overcapitalized and inadequately financed. Many of these combinations, by wise management and the withholding of dividends, have since become strong.

The United States Steel Corporation was always noteworthy for the vast strength of its physical properties and has in recent years become notable for the strength of its current assets. Three years after organization it was thought that this vast aggregation of mills must fail, for lack of adequate working capital. The history of the corporation is in contrast to that of another well-managed industrial, the Standard Oil Company, whose earlier progress was secured essentially by conspicuous strength in liquid assets. International Paper, starting more than 20 years ago, with rather old plants and inadequate working capital, worked its way along with considerable difficulty. The war, creating a great demand for newsprint and limiting the supply, produced an abundance of cash. While some of this will be lost in high cost inventories of pulp-wood, the company is now comparatively strong. American Wool, a company of long processes of manufacture, experienced a savage loss in the price decline of 1920, although protected by contracts with buyers. Its

business, as is natural, has returned to it quickly, after the decline. American Sugar, owing to the scramble for sugar just at the end of the high prices, also incurred large losses. In general those industries requiring long processes, or the accumulation of material in advance of manufacture, are most subject to inventory losses and inventory profits. Among these may be mentioned, besides wool and paper, the tanning of sole leather and the manufacture of fertilizer.

IV

As a rule with industrials the normal percentage of profit on the real capital is greater than with any other type of company, but is also variable. Because of the variability they must pay more for money than the railroads and utilities. The yield, or income, from their securities is therefore higher.

Securities issued by industrials derive their quality from the high return and the variability of income. These companies are well suited to the issue of common stock. The stronger among them may issue sound preferred stocks, but the weaker have put out rather unsatisfactory and disappointing issues. As a class industrials are not well suited to the issue of bonds, with the exception of the very strongest companies.

The investment in common stock is subject to the unavoidable ups and downs of industrial affairs. Dividends and prices rise in time of prosperity; fall off when business recedes. The returns are great, under the right conditions, and with almost any of the solvent and well managed companies.

The investment in preferred stock is to be made more upon the strength of the company. Payment of preferred dividends is not compulsory, even when they are cumulative. It is a mistake to assume that they will continue to be paid, without watching the affairs of the company and understanding its condition. There is less speculation in preferred than in common stock investment, but possibly more danger, because the situation is less keenly watched. The desideratum here is a preferred stock so strong that dividends will not be passed, and income interrupted, in time of depression. The best of the industrial preferred stocks have met this test.

Industrial bond issues, with exceptions, are not a sound security of their type. An earning power subject to interruptions is a poor foundation upon which to build up fixed charges. In addition industrials find it inconvenient to borrow heavily upon bonds because this interferes with their freedom of borrowing at the banks, when business is on an increased scale. Nevertheless with the great increase in strength of leading industrials there are in recent years a considerable number of sound and strong bond issues, secured upon assets of sufficient permanence and value, independent of the fluctuations of earnings.

Industrial notes are usually an expression of difficult conditions, with the hope of better times for their repayment. They are temporary financing. After an inflation period they represent most often the clearing up of heavy bank borrowing, and are to be repaid by liquidation of inventories and accounts. The note may have ample security, or it may depend upon the progress of the business. It must, in each case, be judged upon its merits.

With all industrial securities, at the present time, the most important point is to be sure that the company is sufficiently strong in the cash box to ride through adversity, absorb its inventory losses, and reach the next period of

prosperity intact and in position to do business. If it is strong to endure its securities will some day sell, not upon the present basis of urgent liquidation, but upon the basis of confidence and brightened prospects.

V

The extractive industries are a type of industrial quite apart from the ordinary manufacturing enterprise. They are dependent in extreme degree upon general conditions, both for prices received and for the amount of product sold. Oil, coal, copper, lead, zinc, and silver follow the general trend. Only gold, which, in a sense, has a fixed price, is adversely affected by prosperity, through the increase in cost of mining. It is characteristic of these industries that the supply of product, capable of indefinite expansion if given time and the stimulus of profitable prices, is nevertheless fixed at any moment by the capacity of the operating mines and wells. It cannot keep even pace with demand, either in expansion or in shrinkage. For this reason these companies feel prosperity and depression acutely and almost immediately.

Anthracite coal securities are more dependable than bituminous, the trade served being steadier and better organized. The large, well equipped bituminous mine, with good railroad facilities, is preferable to the smaller, more remote, mine on an inferior seam. Low cost copper mines which can make a profit at almost any price for the metal present better securities for investment than the high cost mines. The latter are more speculative, rushing up violently, in prosperity, when the metal is high, and descending profoundly when there is an oversupply of copper and the metal is low.

All extractive company securities are dependent first of all upon the value of the properties as that may be ascertained and upon the volume of the issues based upon that value. Too often, especially with oil and the precious metals, the price of a new stock depends upon ex-parte statements, fraudulent or semifraudulent selling methods, and the investment fashion or enthusiasm of the moment. There are recurrent manias for mining stocks, as in 1906, and oil furors, including one since the war. At present the extractive industries are suffering from an extreme oversupply of product, the natural sequel of the recent period of inflation.

VI

Railroads and public utilities are in crisis owing to the enormous rise in expenses during and after the war. For that reason a long-distance view must be had of their affairs—a view that goes beyond the immediate present.

Railroads have an immense investment in plant in proportion to business done. The turnover is slow and the margin of profit small. The 5½ to 6 per cent upon the value of the property expressed in the Railroad Law as a measure of net earnings represents the normal rate of return in good years, and among properties better than the average. It is a rate not reached from operations since 1917, and often failed of in previous years.

The truth about railroads is that owing to their prime credit and the favorable attitude of the public toward their securities, investment has pressed closely upon the heels of earning power. If money could earn the going rate in railroads, it went into them. The result is that the average railroad in normal years could earn no better than the going rate on the money that had been put into it; in most cases less; and in the abnormal years of overregulation

and rising expenses almost universally it earned less for its stockholders.

The reasons for the prime standing of railroad credit and securities are, first, that the business itself is steady, second, that railroad issues rest upon permanent property; the fixed plant being very large and the net current assets almost negligible, and, third, that this property is a public necessity which must continue in use. No substantial railroad has ever abandoned its tracks and given up its business. In case of financial difficulties and receiverships security holders have had opportunity to recoup their losses out of the ensuing reorganization and reconstruction. Accordingly railroads have offered the best corporate foundation for the issue of both bonds and stock.

Prosperity and depression affect railroads. The volume of traffic increases moderately when business is active. It decreases, quite sharply for a few months, but on the whole moderately, when business slackens. The forepart of a period of prosperity usually increases the net earnings. During the later portion the net is cut into by rising expenses. Upon depression setting in there is an unavoidable delay in reducing expenses. The net suffers badly for some months until expenses can be fully controlled and got in hand. Net earnings continue on a somewhat reduced basis during the period of business depression.

This is the natural tendency of railroad earnings, largely determined by the expenses. The delay in adjustment arises mainly from the fact that more than half of the expenses are for upkeep and much less than half for running trains. It naturally takes several months to readjust tie, ballast, and rail programs entered upon for the entire season. It takes some time, also, to cut down forces of operation, rearrange train schedules to fit new traffic conditions, and to use up the high cost coal of prosperity and substitute the low price contracts of depression. Wage adjustments are also slow of accomplishment.

The slow adjustment of earning power is accentuated by the control over rates of the Interstate Commerce and State Commissions. These are deliberative bodies. They hold hearings to accumulate vast quantities of evidence regarding conditions already past. The decisions are reached still later. Accordingly the rate adjustments have been much too late to cope with current emergencies.

The full vigor of rate control began in 1906, almost contemporaneous with a progressive rise in expenses. Prior to the war the railroads were being forced to narrower margins of income, and were becoming gradually impoverished. The war, with its enormous rise in expenses, would have ruined the railroads had it not been for the aid and subventions given by the federal government. After the termination of the federal control, with traffic depressed but expenses still inflated, the railroads reached their most critical hour of trial.

VII

Both private operation and governmental control are undergoing a searching test. The lavish aid extended by the government during the war period was magnificent in its courage and breadth. For operating expenses alone the subvention amounted to some $1,800,000,000, or nearly 10 per cent of the cost of the railroad system since its inception. Some $800,000,000 in addition was advanced for betterments and capital expenditures. But at the same time the government also lent a ready ear to the war-time demands of

labor, increasing the annual wage bill more than two billion dollars, from $1,600,000,000 to $3,800,000,000. It left behind its control the National Railroad Labor Board, to maintain under private operation the federal jurisdiction over the two most important factors of operating, the wages and working conditions. The re-establishment of private control is only partial, the government controlling the rates, or income, and the wages, or expenses.

In the attempt to pass the wage burden on to the public increases of 25 to 40 per cent in freight rates and 20 per cent in passenger rates were made effective in August, 1920. In November the sudden depression in business nullified the benefit of the rate increase. For the next eight months the railroads had alarmingly small net earnings: for the first three months of 1921 the operating expenses were not covered. At length, on June 1, 1921, the Labor Board announced a reduction of only $400,000,000 in the annual wages, to take effect July 1. The resulting stress is serious and exhausting.

The railroads, for their part, have met this crisis with frankness and manhood. The publicity agents who proclaimed that the $1,200,000,000 increase in rates of 1920 simmered down to a question of a few cents only in transporting a suit of clothes from New York to Los Angeles were relegated to the rear. The ablest of the railroad leaders took the stand, told the truth about the situation, and were believed. The public sentiment had already turned in favor of the corporations, as shown by the railroad law of 1920 which proposed to base rates on a fair return on the values of railroad properties, instead of, as previously, upon the complaints of shippers asserting a nebulous unreasonableness of rates. The public, after long years of alienation, is now behind the railroads, and desires to see them succeed under private ownership and operation. It recognizes the genuineness of the railroad side of transportation questions, appreciates the efficiency of private management, and sees the danger of political control.

The means by which the crisis will be passed are at this writing still to be determined. The relief afforded by the wage reduction is too slight. The nettle has not been grasped firmly. It is necessary to complete the deflation of prices before business is restored, and the outstanding obstacle is still that labor has not been fully liquidated. There is to be faced, therefore, a period of light traffic and high expenses. At the same time rate adjustments are suggested which will take away part of the already insufficient relief from reduction in wages.

It is obvious that a condition of strain will continue, resulting in receiverships of a number of the less favorably situated companies. The railroads as a whole are heavily indebted for fuel and supply bills, and have in addition borrowed largely from the banks. Certain immediate expedients will be applied. The Railroad Administration is endeavoring to hasten the settlement of its outstanding accounts with the railroads, paying cash and funding portions of the debt owed to it by the railroads for betterments. The railroads themselves are economizing, reducing forces, and withholding orders for equipment, ties and rails, delaying repairs and postponing new construction. It has been suggested that the government give further aid, either by funding all debt owed by the railroads to the administration or by the more questionable expedient of restoring the federal guarantee of earnings and continuing

the railroads as wards of the Treasury.

When the crisis has produced receiverships more decisive steps will undoubtedly be taken. It is to be hoped that these will take the course of reducing expenses by the natural cuts in wages, leaving the railroads to win the struggle on their own initiative and with their own resources. The objection to a government subsidy is not only that it creates a class of favored wage-earners who draw their pay out of the pockets of other workers, but that it deadens the spirit and destroys the morale of railroad enterprise. But whatever the course followed the crisis will eventually be of the past.

Afterwards railroad securities will again be established on a more favorable basis. Should the government continue to give aid it must then protect its investment in railroads. Should the remedy follow self-dependent lines the companies, which have been oppressed by a period of rising expenses, should benefit from a period of declining costs. The tardiness of rate-making commissions, which has injured them while expenses were mounting, may aid them while these are decreasing. In addition hostility has turned to solicitude. The commissions, particularly, can be expected to temper their justice with mercy, understanding that too great rigor will destroy.

Railroad securities stand high because of the perpetual and steady business. A stream of traffic once established is like a river that cannot be diverted or caused to dry up. Railroad securities also stand high because the important facts can always be known. The annual reports, prepared under the accounting rules of the Interstate Commerce Commission, give the fullest of statistics. There are, accordingly, few sudden and unexpected changes in condition to be feared, which should not have been known beforehand by investigation.

The valuation of the railroads, still uncompleted and most probably destined never to be finished, has nevertheless progressed far enough to answer the main question, which is that the value to be found supports, on the average, the existing capitalization, including both bonds and stocks. Some roads, well known for the water included in their non-dividend paying stocks, are exceptions. In the rate advance proceedings of 1920 the Interstate Commerce Commission based its findings upon a tentative value, for the country as a whole, of over nineteen billions of dollars, as compared with a capitalization of twenty billions. Eventually, after the existing unsettlement is over, railroad securities should occupy a better protected and more assured position than at any previous time.

VIII

Traction companies have much the same general position as railroads with reference to the course of business. They have large fixed investments, and a slow turnover of capital, second only to the railroads. The urban traffic is steady to an unusual degree. Rates of fare on city lines have usually been fixed by franchise. The companies having been placed in an impossible position by increase of expenses, these rates have been raised, during and since the war, in over six hundred cities and towns. The relief has not been proportionate to the great rise in expenses, and many of these companies are in difficulties.

Tractions are of two types, urban and interurban. As a rule the former afford the better basis for securities. The city traffic is denser, the operating conditions more favorable, even on the

crowded streets. The best property of all is the through line in the city occupying private right of way, or placed in a tunnel or on an elevated structure. The chief difficulties with city tractions have been the political quarrels with local authorities over expiring franchises or rates of fare. Such troubles had been experienced in nearly all of the large cities except New York prior to the war. In New York the question of fares became a political issue during the post-war inflation. Other troubles, principally of an earlier period in the traction industry, arose from mismanagement and overcapitalization. The troubles of interurbans are of a different nature. Fifteen to twenty years ago an exaggerated idea was held of the economy and efficiency of electric transportation, largely because properties were new and maintenance was underestimated. Lines were built freely, across country that would not yield a paying traffic. These lines have been embarrassed by their expenses and by the increasing use of passenger and freight automobiles. Over three thousand miles of track have been abandoned.

Tractions are distinctively local enterprises, to be judged by their franchises, and their relations with the public, as well as by their property and their earnings. On the whole the industry is establishing more satisfactory relations with the public, either through franchise protection or by means of a "service at cost" plan of regulation. The outstanding characteristic of the business being the comparative freedom from fluctuation of passenger travel, whether times are good or bad, it follows that reduced expenses, such as are now at hand and in prospect, should increase the net earnings.

At this time much discrimination is required in choosing street railway securities. The strain is not yet over and many of the companies are either in receivers' hands or are barely averting receivership. For that reason traction securities as a class are somewhat discredited, and low in price. Securities of solvent and well managed companies, and the underlying bonds of companies which have defaulted on junior issues, offer rather definite opportunities of profit.

IX

Electric light properties have been in more favorable position than the tractions. The business being newer and the services performed mainly by contract with private consumers, the rate regulation has been less stringent than with either railroads or street railways. The treatment has been more liberal. The machinery and appliances having been improved rather swiftly, the companies have been permitted to retain a considerable part of the profits of economy and efficiency. There has been a margin, even during the peak prices for coal.

The business is steady, with only moderate changes in accordance with business conditions. These companies are frequently yoked with tractions, they receiving a steadier load, or demand for current, and the traction receiving cheaper power. On the financial side this union has, in recent years, usually resulted in the lighting company carrying, or attempting to carry, the traction. The lighting companies have, also, where permitted to do so by local laws, undertaken to furnish power to industries. This is usually an advantageous development, giving a market for current produced at hours when the machinery would otherwise be idle. The power load for industries, and consequently the earnings, fluctuate somewhat according to general business conditions. As a whole

the electric light industry is still growing and the principal effect of depression is a retardation of growth.

Gas is the poor man's light. It is also coming into wide use as fuel. The rates have long been a favorite political battle ground. In most cities they have been too low to withstand the increase in expenses due to high-priced coal and oil. As a whole, however, the companies are still solvent, and their earnings are improving with the breaking of the market for coal and oil. The business is extremely steady, the chief effect of prosperity and depression being upon expenses.

X

Hydro-electric power companies require an extremely heavy capital outlay. Their problem is to sell power enough to take care of the initial investment. With large and expanding systems such as the Pacific Gas and Electric Company the problem is to find new capital to keep up with the additional sales of power. The financing of new hydro-electric properties has almost necessarily been upon a construction company basis, bonds being issued to cover the cost and stock as bonus or inducement to make the bonds palatable and pay the entrepreneur and financier. The securities of a seasoned hydro-electric, such as the Niagara Falls Power Company are often well guarded and safe. Those of a new or uncompleted project are speculative.

These companies have small operating expenses. The steadiness of their incomes depends on what class of customers they serve. Where large blocks of power are consumed by industries, as for example in chemical processes, the load falls off in time of depression. Where the power is used largely for traction and light purposes and particularly where part of the current only—and that the cheapest part—comes from water power, the load is steady at all times. Recent renewals of contracts, such as those of the Mississippi Valley Power Company, have been at advanced rates, because of the enhanced cost of the competing power made from coal.

A sharp distinction is to be made between companies selling primary power, where there is always plenty of water or auxiliary steam plants at call, and those selling secondary power, where low water reduces the supply of electricity or interrupts the service. The latter are of inferior earning power. Secondary hydro-electric power has been used successfully in conjunction with existing steam plants, as in the case of the installations of the Consumers' Power Company of Michigan. But by itself it creates inferior securities. Primary power, where there is adequate market for the current, an established business, and a moderate capitalization per horse-power, creates excellent securities. The earning power is little affected by the ups and downs of business, and the present outlook for plants already built is on the whole favorable.

Corporate securities outstanding in the hands of the public aggregate some fifty or sixty billions of dollars. These securities, together with farms and city real estate, represent the bulk of the national wealth. Together with the government and municipal issues, which are a debt against that wealth, and the loans of foreign countries, they are the fabric of investment. All securities, whether resting upon earnings or the taxing power, are dependent upon the course of business for value.

XI

Bank credit is the most general, most fundamental, factor controlling

the course of business. All of the forces of trade, industry, and finance center in the banks. Their position is the expression of a country-wide, and at times world-wide, complex of activities and relationships. The situation with respect to the lending of credit is in constant flux.

The cause of the changes in the bank figures, and in the rates for money, is not always clear. The result is explicit, a definite point of departure for the investor, if rightly read and understood. The weekly bank statements, together with the analyses published in the Federal Reserve Bulletins, are the most comprehensive and the most immediate index of business conditions. They afford insight into the prospects for expansion or contraction. They also furnish a basis for judgment as to the course of bank rates, changes in which directly affect the prices of securities. They reveal what is actually going on in finance, industry, and trade. The best, and most nearly inside, information the investor can have is knowledge of the credit situation drawn from these official sources.

Under the old National Bank system the banks in the reserve cities were required to maintain an inelastic cash reserve of 25 per cent of deposits. The moment the reserve fell below 25 per cent credit had to be curtailed in order to draw in cash. Call loans were called; then time loans were not renewed at maturity. If banks generally were in the same situation they found themselves forced into a competitive scramble for cash, by process of restricting credit. By reason of the inelasticity of the reserves the banks were compelled to cease to function in time of commercial difficulties, were obliged to restrict credit just when they should have extended credit. This produced "money" panics, which recoiled upon the banks themselves. After the first burst of destruction the banks stayed further wreckage, in so far as they were able, by resorting to a credit expedient outside of the banking system and issuing Clearing House Certificates.

XII

The Federal Reserve system was designed to obviate these disastrous panics by creating a stronger basis for credit and permitting a more discretionary use of credit in time of strain. Under this system the bank reserves are no longer individual, held in separate vaults, but are pooled. The reserve requirement of the member banks is lower. The reserve limit is not rigid but elastic.

The reserve kept by member banks against demand deposits is 13 per cent in the Central Reserve cities, 10 per cent in the Reserve cities, and 7 per cent in other places. A 3 per cent reserve is required against time deposits. These reserves are not kept in the member banks' own vaults but with the federal reserve banks. The latter keep gold reserves of 35 per cent against the deposits of the member banks and 40 per cent against federal reserve note issues. This reserve against notes is not mandatory. When it falls below 40 per cent notes may still be issued subject to a graded tax. When the reserves of the member banks fall low they may be replenished by rediscounting commercial paper, or paper secured by government bonds, with the Federal Reserve Bank. Paper secured by bonds and stocks of corporations cannot be taken from the loan portfolio and rediscounted. The system is designed to support commercial, and not stock exchange,

credit: the avenue of relief for low reserves is, however, sufficient.

When the reserves of the federal reserve banks fall low the first recourse is to increase the rates for rediscount. This step is by no means as quickly effective as it was before the war, among the European banks. There is no longer a free international movement of gold, from low-interest money markets to those paying high interest. There has been universal inflation, with comparatively high rates of interest everywhere. But to increase the rate is still gradually effective, discouraging expansion and eventually bringing about deflation of both note issues and credits. It has not yet proved necessary to supplement the raising of the rate by imposing a tax on note issues, although for an uncomfortably long period in 1919 and 1920 the reserve against notes hovered close to the line of 40 per cent.

It is hard to figure the limiting ratio between deposits and cash for the dual system of reserve banks and member banks. On November 15, 1920, the total demand and time deposits of 9567 member banks aggregated $21,143,375,000. The gold holdings of the federal reserve banks were about two billion dollars. Thus the ratio between the deposits of the public and the gold of the inner banks was about ten to one, or a little more. For all practical purposes this is close to a maximum ratio before beginning to tax notes. It is evident that the new banking system greatly increased the volume of credit that might be employed.

The installation of the Federal Reserve system was practically contemporaneous with the beginning of the European War. For a time it seemed that credit would be in practically unlimited supply. War demands were, however, financed to an extent much greater than is commonly realized, by the use of this enlarged credit. The discarded national banking system, however, would have broken down, being totally inadequate to such enormous demands. The reserve banks carried the brunt of the Liberty and Victory loan financing, met the governmental borrowing upon Treasury certificates, took care of the expanded commercial borrowings upon high-priced merchandise during the period of feverish activities, and, finally, supported the so-called "frozen credits" upon commodities that could not be moved because their market had failed them. The credit expansion reached the full normal capacity of the Federal Reserve system, far more quickly than any one had dreamed possible. Credit contraction has now been entered upon, with some difficulty but without a panic, and is still in process here as almost everywhere else in the world. Wars inflate and are followed by deflation.

The Federal Reserve system having met with so great an emergency in its first hours, it is not possible to say how much of its vast powers of credit will be required for the normal business of the country in time of peace. For business executives the bank statements are, nevertheless, more than ever the primary barometer of the commercial and financial outlook. It is true, also, that after the pains of liquidation are over and that after a firm foundation is again reached, credit will be, for a long time to come, in abundant supply.

XIII

There are three principal types of loans of which two are directly, and the third indirectly but intimately,

dependent on bank credit. Short-term loans are made by banks to corporations and firms for temporary requirements. Under the practice favored by the federal reserve authorities most of these are self-liquidating loans or credits, based upon goods in process of sale or collectible accounts. Long-term loans are obtained by corporations from the sale of bonds to investors through investment bankers. The proceeds of these go into fixed property and permanent plant and they are usually refunded at maturity and not liquidated in cash. Call or time loans are made by banks to individuals, or their brokers, for the purpose of carrying securities. These are secured by collateral, are not self-liquidating, but may be discharged by sale of the collateral. Under conditions of easy credit both time and call loans may become in effect standing loans. But payment may be required, and often is when credit becomes tight. The three types of loans have different functions. The first finances trade. The second finances construction. The third finances the purchase of securities. These are general distinctions with exceptions.

Corporations provide their permanent endowment of funds by issue and sale of stock and bonds. In well managed companies this permanent provision includes a normal amount of working capital, while with weaker companies part of the working capital may be borrowed money. But all companies, no matter how fully financed, require additional money when their business expands, and especially when wages and costs are high and trade is brisk. For these temporary purposes bank credits are resorted to.

Increased prosperity means increased bank loans, to carry the larger business. Depression means a decrease of bank loans. In 1919–1920 the increase in loans was about three billion dollars. In 1921 the loans decreased slowly, but steadily, as inventories were sold down and accounts collected. Business is always moving, either expanding or contracting, rarely standing still save in time of profoundest depression. Bank credit supplies the power to expand, the elastic cushion for contraction.

XIV

The condition of business may be judged in a broad way by observation of the bank statements. Its expansion or shrinkage are at once visible. Further, its turning points are indicated in advance. When bank credit is stretched to the line of pressure, by exuberant prosperity, the power to enlarge business has disappeared and the next phase is certain to be a downward change. On the other hand when, during depression, bank credit has become abundant, and money is easy, the power to enlarge business exists, and will eventually be exercised.

Securities rise and fall with the banking situation, both for direct and indirect reasons. The price of stocks discounts prospective prosperity or depression: and discounts also the value of money. With credit abundant and interest rates low there comes an hour when securities begin to advance. When credit becomes tight, and interest rates rise, securities are due for lower prices.

The course of prices of stocks and bonds will be discussed in detail in later articles. Suffice it to say here that the liquidation, which marks the end of a period of prosperity, is primarily selling for cash wherewith to pay loans. Securities are sold

like everything else. Having an instantaneous market, and being also subject themselves to loans on margin, they are sold rather more quickly than other commodities. First the bank statements, and then the securities markets, anticipate the great changes in business conditions, before these have materialized in other directions. Loans and credits dominate the course of business.

XV

It is true that the sharp ups and downs of bank credit, under the former banking system, had much to do with both panics and booms, all of the phenomena of which were accentuated. But there are still periods of activity and depression under the Federal Reserve system, and would be under any scheme of bank credits. The mechanics of expansion and recession as related to loans and credits have been discussed in the previous chapter. The philosophy of these ebbing and flowing tides of business lies deeper, in human nature, in the pursuit of livelihood and profit, and in the spending of money for whatever is desired.

Where so much of the science of economics is concerned with explanation of the reasons for alternating prosperity and depression it would be useless to advance a new theory, presumptuous to hold that any one theory was true or complete above all others. Nevertheless, as a plain practical matter, a brief picture of the reasons why must be attempted, in such terms as may bear upon the pursuit of investment. Sketching, without profundity or erudition, from such landmarks as the investor uses to mark his course, an outline may be arrived at to serve as chart of the salient facts.

The demand for the products of business is of two kinds, that of the ordinary and daily consumption and that of extraordinary or special consumption. Food and clothing are always needed. War, the construction of railroads, canals, public works, or of numerous buildings, abnormal exportations of product, and the prevalence of speculative fever, create an intermittent demand for special purposes.

The intermittent demand is superimposed on basic demand for articles of constant consumption. In addition it stimulates the basic demand by increasing the general buying power.

The most active period within our history was that of the Great War. This produced insatiate demands for products, extending through every corner of industry and trade. They began with munitions, ships, steel; passed through wheat, sugar, oil, and other necessities; finished with silk shirts, automobiles, housing, and all manner of expressions of luxury. The demands created rising prices which produced profits. Speculation then became rampant, and bred new and more artificial demands even after the war itself was over.

Other active periods occur in eras of construction, of which the railroad building of the late eighties is perhaps the most conspicuous example. Every dollar of capital poured into construction marks an increase in the special demands of such eras. There is consumption of labor and commodities that the new permanent enterprise may be produced. The limit of this additional demand is set by the amount of money that can be raised, by floating securities or by taxation, for construction enterprises. It is an intermittent demand, diminishing when the labors of construction recede.

Eventually, in all periods of unusual activity, the rising prices, with the ease of launching or expanding enterprises, lead to speculation, to broadening markets at still higher prices, and to extravagant consumption based on prospects. Business becomes unsound. Finally the construction and speculation demands yield place and reduced circumstances are ushered in by a more or less complete return to the necessitous consumption demands.

The law of demand and supply is of universal application. Demand is most usually expanded beyond its average limits by increased construction, but may be augmented by any other diversion of energies into fresh channels, or even by waste of moneys in taxation. Demand is shrunk again when the construction is done, the outburst of energy over, or the moneys spent.

When prosperity approaches it gathers strength as it goes on. The rising prices make money for traders and manufacturers, and create opportunities for speculators. The spirit of enterprise and activity is in the air. To the very crest of the wave the appearance is that business will continue good indefinitely, with increasing activity and higher prices. Not only the incautious keep on with forward plans but the sober merchant, faced with the alternative of closing down until prices moderate, finds it most difficult to curtail. Just at the top orders for goods are characteristically hard to place, are subject to delay, and require premiums for prompt delivery. Business must go on, and orders continue to be placed, after all limits of safety have been passed, in the general expectation that the break will be postponed and that still higher prices are pending.

The prosperity periods are times of increased borrowing in every form. First there is financing of construction by security issues. Then the ordinary mercantile borrowing is increased. When money becomes tighter long-term financing of corporate enterprise turns naturally to the temporary expedient of notes. Speculators borrow upon collateral, syndicates upon bond issues not yet sold. In the end there is an excess of borrowing from banks. There are bank loans upon undigested securities, bank loans to finance the needs of corporations which cannot sell securities, bank loans on collateral which has been bought but not yet paid for, call loans for speculation, and, by no means an unimportant factor, bank loans and credits to merchants and manufacturers for the enhanced cost of inventories.

At this point the mechanism of credit is strained. The break in prosperity comes when borrowers begin to run short of credit, or when the banks begin to take counsel of prudence and curtail their accommodation. In 1907 the Knickerbocker Trust Company became overextended with slow loans to construction enterprises, and other banking institutions with speculative loans to insiders. The inelasticity of the banking system immediately forced a drastic reduction of loans by all banks, and produced a disastrous panic. In 1920 there was a gradual reduction of credit. The attempt at a gradual deflation of prices resulted in an almost complete cessation of buying until prices should have accomplished their full reduction. There was no panic. Failures were comparatively few, although the decline in prices was the greatest, in point of percentage, ever experienced in the history of the coun-

try. The paralysis of activity was immediate and sudden.

What follows next after prosperity breaks is the exigent effort to pay loans previously contracted for, to sell goods acquired at high cost, and to complete half-finished construction. It is a period of sales to raise cash, following upon a period of purchases upon credit. Supply towers over demand, in place of demand crowding supply.

The period of liquidation is difficult enough, even under the present banking system. The problem is to dispose of goods under the new conditions fast enough to meet debts incurred under the old, and at the same time to carry such expenses as cannot be cut off. Speculators in commodities or stocks, unless they can turn quickly, see winnings turned to losses. Non-speculative business finds itself clogged with inventories bought higher. It cannot as a rule turn quickly, and must incur losses. Receiverships and bankruptcies follow, not only among weak companies but among those which guessed wrong and over-bought.

The enormous strength of the greater industrial corporations in net current assets, due to the retaining of war profits in that form rather than in new construction, helped to avert the most serious consequences in 1920. The banks supported the situation with exemplary courage and cohesion. Otherwise the price decline, the cancellations, and the paralysis of trade, would have produced an unparalleled wreckage.

The immediate stress of the liquidation is over after the current loans have been met, or defaulted on, as the case may be. Supply ceases then to be so insistent. There follows a period of depressed activity, of nursing lame ducks along, winding up insolvent corporations, and getting rid gradually of stocks of high cost materials and finished products. It is a time of little or no profits, when enterprise is sick, and buyers are slow and timid. Eventually, the banks find themselves with a surplus of money, and a quiet situation in which they can lend credit without fear.

As a rule it takes a year or more for the active liquidation to run its course. After previous wars of great exhaustion the price declines have continued for a number of years. A great deal depends upon what is in oversupply and how much there is of it. At the present time there are excessive stocks of almost all of the raw materials, the ordinary commodities of trade, comparatively little excess in finished products, and no oversupply at all of construction enterprises, unless ships and war plants be so denominated. The manufacturer may look for rather quicker relief than the producer of raw materials.

The length of the depression ensuing upon liquidation depends upon the severity of the collapse and its cause. If due to overconstruction there are required reorganizations, readjustments of corporate debt, and rebuilding of earning power. But where the price level was so artificial as in 1920, the fall so tremendous and world-wide, the strain upon credit both from the prices and the war so universal and so exhausting, the road to recovery of full activity will undoubtedly be long and arduous.

Trade and industry will eventually resume, in finished goods of necessary consumption sooner than in raw materials and heavy manufactures, at some price level yet to be settled. The consumption demands most directly affected cannot remain dormant for any great length of time.

WHAT TO EXPECT FROM BUSINESS RESEARCH

BY ERNEST S. BRADFORD *

WHAT can business research accomplish? Will it show how to increase sales? Can it help in regaining lost business? May it be depended on to point the way to successful marketing of new products? What else can it do?

These and other pertinent questions are being asked by business executives who believe that the low point of the business depression is passed and are preparing to seek new business with the help of every possible improvement in their methods.

Examination has disclosed that most of the research departments which are being operated successfully were developed prior to the war by capable research men under managers who had a clear idea of the function of research and some conception of the time it would require to start a new arm of their organization. Other companies which were led by the possibility of securing a similar broad grasp of their selling and manufacturing problems to instal such a department, failed to consider adequately what the department might be reasonably expected to accomplish; and when the depression brought an end to the easy profits of the war period, they either curtailed or abolished the research department before it had time to show its value. In some instances, they even expected it to suggest ways of preventing the falling off of sales, regardless of the world-wide forces which were responsible for the general decline in buying.

The experience of the concerns which since the signing of the armistice started and then stopped commercial investigating work indicates a lack of understanding in some quarters of the part played by research in business, which has been responsible for the hasty establishment and the equally abrupt discontinuance of the department. The successes and failures in this field have led to the recognition of certain practical results which the executive may expect to get from his new department, and the pitfalls he should avoid, if the department is to be an important and permanent factor in his business.

Research is commercial scouting. Its duty is to map out the business field systematically and suggest points of attack. It stands back of the firing line, ready to supply information regarding plans to be followed and the progress operations should make. Research, is thus advisory and auxiliary in its nature, performing a staff function. It furnishes a form of business counsel. Its object is to assist the sales manager, or the other executives, in deciding their policies, the carrying out of which—that is, the actual selling or advertising—is to be done by the executive department. In order to make research pay, the executive must apply the data it secures to the situation in hand; he must utilize the department to good effect. Otherwise it is a useless expense.

II

The function of research, then, is to get the desired data, organize, and present them properly. It follows that the executive should be sufficiently

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familiar with the research staff's work to know if it is meeting requirements. These requirements are:

1. To get data pertinent to the problem in hand.

2. To get data which are reasonably complete and accurate.

3. To interpret the facts correctly.

4. To present data and conclusions clearly and simply.

That the data should relate to the problem in hand is a matter of primary consideration. If the question for which an answer is sought is, for example, the reason for decreased sales in a given territory, it may be quite pertinent to secure information on underlying factors, such as crop conditions in the territory in question, or the buying habits of new settlers in the region. On the other hand, for a population of city consumers, such an inquiry might be too broad, or, in the case of certain products, entirely irrelevant. The research head is the immediate judge on this point, but the sales manager is also vitally interested, since it is for him the information is being obtained.

The information secured by the research staff should also be reasonably complete. There must be enough data. This does not mean that every point has to be covered with equal thoroughness, but rather, that the relative merits of the different points should be kept in mind, as they are taken up in succession. A sense of proportion is highly necessary for all data-getting machinery.

Although the finding out of facts about business has been carried on in some fashion for many years, the use of the special term "research" (and there seems to be no better available) suggests the superiority of the present orderly and scientific collection of such data, conducted according to a definite plan for a clearly recognized purpose, over the former more or less haphazard method. Completeness in this work therefore signifies that while some items of information are recognized as more important than others, all must fit together as related parts of a well-rounded whole.

There is more danger, however, that the data will not cover a wide enough range than that they will include too many facts, since a further survey may show that what appeared at first to be irrelevant is really a fundamental element in the conditions under inquiry.

III

To illustrate: A manufacturer of fiber soles suffered an alarming falling off in sales. The product had been improved to a point where it had appeared to be giving general satisfaction, when a marked slump took place. What was the cause? The president sent for his research man and put the question to him. It took almost thirty days of the most active investigation to find the answer. The facts which first came to light were that the color of certain brands was not right; also that some manufacturers had not been sewing on the fiber soles properly. It was found, too, that many shoe repair men did not know how to adjust their sewing machinery when attaching the new sole to the shoe; further, that the shoe repair men who sewed soles on by hand were using leather exclusively.

But the decline in the sale of the fiber soles had been so great that a further search was made and a more fundamental cause was disclosed. There had been an unprecedented falling off in the demand for men's shoes throughout the country, due to the drafting and sending across to the trenches of France of the first million men. These were young men, good spenders, men who bought shoes fre-

quently. Moreover, the war economy wave had spread over the country, and those who were left to "keep the home fires burning" took their old shoes to the cobbler to be re-soled, instead of buying a new pair. There had occurred not only a huge falling off in the demand for men's shoes, but a wholesale shifting of what market there remained from new to repaired shoes.

The remedy, so far as there was a remedy, lay in showing the consuming public and the repair men the advantages of fiber over leather soles and in getting the manufacturers and repair men to sew fiber soles on properly. The reason why the men who sewed on soles by hand would not use fiber soles, even when requested by customers, was because the hole made by the awl in the fiber sole closed up before the thread could be put through. So an awl with an eye was recommended, which carried the thread through the sole.

This last point is an example of how a vital fact occasionally raises its head in the most unusual places and calls attention to a condition, the existence of which could scarcely have been anticipated. On this account, the work of the research department should be thorough. The constant presence of factors in a situation, which reveal themselves only after much investigation makes it, in general, necessary to anticipate some variation from the original outline of every plan, and to allow, always, a certain margin of time and cost. For such factors the research man and the executive must always be on the alert.

The need for close observing and accurate reporting of the facts in the research department goes without saying. The frequent use of the statistical method is a means of insuring accuracy, and while this method should not be overemphasized, its use strengthens the investigation at many points, giving definiteness to a conclusion which otherwise might be open to question. A concern, for example, which was getting a new shaving preparation ready for market had experimented until the number of samples was reduced to four. These it distributed to 50 men of various professions and stations in life, with the request that they try each sample and express a preference. In the returns 32 expressed first preference for sample number two; the remainder divided their first choice among the three other samples. A second test with a different group of men showed practically the same result. As the distribution was made to representative classes of users, the showing could scarcely fail to determine which of the four samples was the best.

To interpret correctly the data it has secured is another matter which the executive may reasonably expect from his research department. Fact-interpretation always goes closely with fact-getting, for the conditions under which the data are secured have frequently an important bearing on their meaning and value. Careful analysis of data, and their organization and classification, are involved in interpretation as a preliminary step; it is hard to say where one process ceases and the other begins. Comparisons, explanation, construction, reasons, conclusions are all closely intertwined with the facts themselves and much of the interpreting is swift and easy when once an adequate amount of information is at hand. Where there are several possible interpretations, additional data may have to be secured or a method devised for more accurately weighing the material already available. The exercise of such care takes time, but it is well worth while when the conclusions are clear and unmistakable.

The presenting of the information

secured in the form of a readable, straightforward, and time-saving report is the necessary final step in research work. The research work may be viewed as a commodity, and the report as the package in which it goes to its market, the manager. Naturally, the "package" should be in proper form and pleasing. The language should be plain and the arrangement simple. A summary at the beginning will save the time of the busy man who is to read the report in order to decide what should be done. The point of view of the executive should be visualized, so far as possible, by the research staff, and his requirements anticipated in the presentation. The more time that research saves the manager, the more valuable it is to him.

IV

"Selling" and "markets" are questions most frequently dealt with by commercial research, as the term is commonly used and understood. Just as the "efficiency movement" and the Taylor system emphasized the need of a closer study of production, so business research is now directing attention to distributing methods. Within this field the research department may be expected to handle successfully a considerable range of subjects. More specifically, sales research should do for the executive the following, though the list is not exhaustive:

1. Supply fundamental facts regarding the business or industry, as statistics of consumption or production, comparisons of yearly or monthly output, orders or shipments by months or weeks, and the like. These are basic data, needed at the beginning of any fundamental study of a business, and too often lacking. Some trade associations attempt to supply such figures for the entire industry; but more often the manufacturer must rely on his own efforts if he wishes to secure them.

A graphic chart will frequently be of great help to the manager by enabling him to make a forecast for the ensuing year sufficiently accurate for immediate purposes. It will also obviate the necessity of making several detailed investigations when there is not time enough. Simple curves, showing the relation between output and orders over a certain period may disclose important general trends, sometimes in the nature of seasonal fluctuations, and make possible a close estimate of coming changes in demand in the territories considered.

In the case of a certain manufacturer of small electrical devises, one of the first facts to be supplied by his research men was the average yearly consumption by each household connected to electric current, and the total consumption per year of such devices, over a series of years. The investigation showed the rate at which a certain improved type of appliance was displacing others, and indicated where the future market lay. It also showed the relative importance of homes, in comparison with factories, as consumers of the same article.

The beginnings of this statistical and graphic work frequently take considerable time, as it is necessary to estimate the relative importance of existing figures and sometimes to initiate the collection of more correct data by the use of better methods. It pays, however, to exercise great care in laying this foundation.

2. The establishment of sales standards is another fundamental work in which the research department may serve the organization most effectively. When statistics extending over a series of months or years have been collected and studied, and particularly if attention has been fixed on their relation to

a series of definite consumption facts or peculiarities of production, it becomes possible to set up standards by territories and by months for the company or even for the whole industry. When there are several factors in the situation —weather, crops, financial conditions and the like—the recognition of these may lead to installing a system of "points," which results in a series of sales standards far better than the ordinary quota figures, because they are more fundamental.

The sales quota is frequently based on last year's sales—what has been accomplished in some previous period —without relation to the underlying factors influencing it. In the case of the electrical manufacturers, already referred to, who sold a product consumed in about equal proportions by homes and factories, analysis of sales by districts by the research staff failed to reveal certain significant facts, until a two-unit sales standard was devised for the business. This consisted in a certain yearly volume of sales per family, that is, per house wired, and a certain other volume of sales per electric horsepower installed in factories. When the standard was applied to each district, the sales varied in proportion to the size of the two markets—homes and factories. A weak spot was at once revealed by this analysis in the mid-west territory, where the sales, though very large and up to quota in the absolute, fell far below what they should have been considering the great house-wired population of the section and its importance in industrial power-consumption. When attention was thus called to the situation, steps were taken at once to remedy it, by making the product better known to customers and using other more effective sales methods.

3. To the erection of significant and fundamental sales standards must, therefore, be added a closely related function which research should perform, the location of weak spots in sales.

These weak places, or gaps, may be in a certain territory, or may occur in other places or ways. The research department of a concern manufacturing a product sold in large quantities to mills, factories, and public utilities, found that the sales to steam railroads and sawmills were very large, but to steel plants and rolling mills very small. The market was there but was unnoticed and no effort was made to get the business. A simple analysis of the sales showed the sales department where to secure a considerable amount of new business, which it proceeded to do at once.

4. To analyze selling methods for the purpose of improving them at some point along the line is another function to be performed by the research department—in fact it is one of the fields in which a very large share of research work is being carried on at present. It includes investigation of any one of several links or factors in the chain of distribution—salesmen, jobbers, dealers, prices, terms, promptness in shipping, and many others.[1]

5. Explaining declines in sales of existing products is closely related to recommendations for increasing sales of such products, though it may not be possible always to increase the sales of a product, where an entire industry is declining, or where some other equally basic reason for the decline may exist. A research group of a certain company was asked to prepare an answer, after thorough examination of the field, to the question whether a subsidiary company should not be organized to take over the handling of a line of products, the sales of which had failed to show any appreciable increase over a period of several years. Inquiry into

[1] For full list of items see chart on page 646.

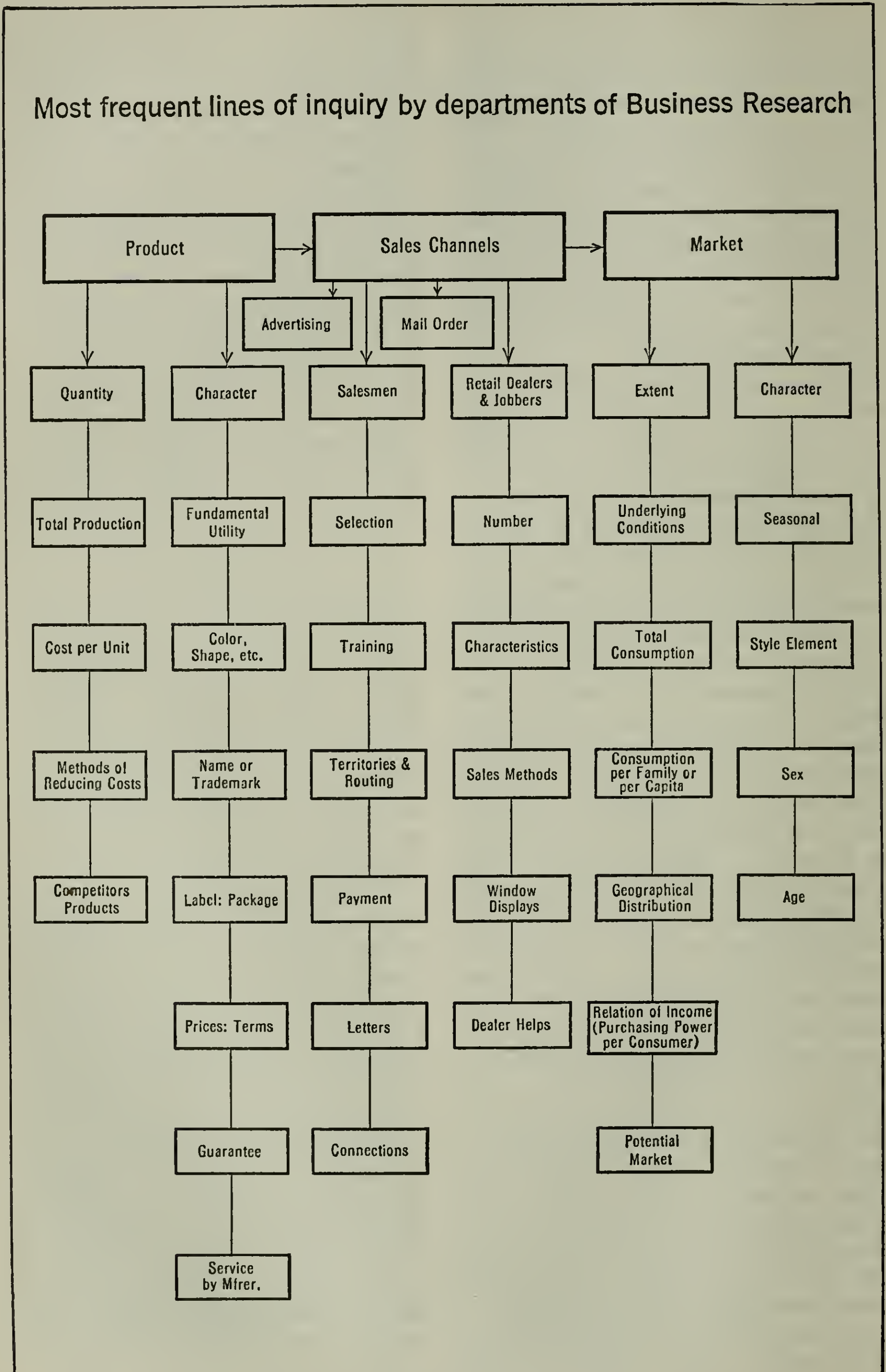

Chart for Analyzing Selling Methods for the Purpose of Improving Them

recent engineering and power developments showed a definite, though gradual, decline in the market for what was one of the oldest and best known of the company's lines. Further investigation showed certain ways in which the situation could be improved, but it did not reveal any good reason for organizing the proposed new incorporation, as the whole industry was slowly but surely sliding downhill and even the most strenuous efforts could but temporarily retard its decline.

6. Outlining plans for the successful marketing of a new product is another function which the executive should be able to turn over to his research men with assurance of adequate treatment. It is pioneering, however, and involves much more labor than merely analyzing the sales methods of existing products. There are fewer guide posts along the way in prosecuting this work. Nevertheless, the roads are parallel and much may be learned from a comparison of the new and the old products.

7. Analysis of advertising methods—media, appeals, advertising costs, and the whole program—is one of the phases of selling which is receiving special attention. It merits discussion in a separate article. Suffice it to say that the same principles of analysis which are used so effectively in breaking up and re-grouping general sales facts apply as well to advertising.

Advertising agencies and publishers are trying out advertising research for the purpose of determining how much of a given market is being reached by a particular periodical, and also to some extent, to test the pulling power of some special argument or piece of copy. Those who call this analyzing the psychology of the consumer are likely to spend more time and effort on it than those who say that is it merely answering the question, "What is in the consumer's mind?"

V

While a major part of commercial research work, as now undertaken, falls undoubtedly under one or more of the activities enumerated, there are other lines of inquiry which have been and are being entered upon by research groups for busy executives. Sources of raw materials are being looked up for the purchasing agent, new materials and substitutes, with price trends and qualities. Credit problems occasionally are attacked with success by some man who understands that he is making use of a superior method. Processes of production may be shortened and better methods introduced by using the same system. It is useful in dealing with the manner of handling men, today a leading industrial problem.

If such topics are made part of the work of the research department, time should be allowed it for a thorough examination of the new field, in order to get its bearings, grasp the relative importance of the problems involved, and construct new units of thought and new measuring standards.

Before actually establishing a research department, therefore, the executive should, first, be "sold" on the idea of research, and have clearly in mind what he can expect from it; second, he should have determined whether he is to try a broad and thorough type of research, or to limit himself to a narrower study of specific problems as they arise; and, third, he should be prepared to take sufficient time and pains to put the new department fairly well on its feet. The new department should be tied up in some effective way with the other departments of the business, for unless this is done at the outset, the new department is likely to fall by the wayside. This means making sure that the department gets going, and accustoming other departments to

supplying it promptly with data. Also, he should be sure that other departments when supplied with research data make use of them. The head of the research staff if properly selected, can be relied upon to do the rest, but the executive should make sure that the work is correctly launched and that proper connections are made with the rest of the organization.

Care should be taken not to permit the research department to be swamped at the outset with a swarm of requests for information, to answer any one of which, even roughly, might take several weeks of investigation. Many aspects of the market will be found upon which no data has been collected; and a certain amount of time should be allowed the newly established department for clearing away underbrush and laying a fact-foundation. After this is done, definite investigations may be undertaken, and the work should progress more rapidly as facts are collected and their relation to each other and to the problems at hand are understood.

Research may or may not help to regain lost business. If the trouble is due to some simple cause, the changing of the product itself, or the plan of selling, or the instructions to salesmen, dealers, or the public in regard to its use, may be expected to bring sales up to a higher level—frequently much in excess of former trade. If, however, the slow business is due to fundamental economic conditions, perhaps world-wide in their application, as at present, analysis may reveal only a few relatively less important remedies which the individual manufacturer can apply. Time will bring basic changes for the better —as it is already beginning to bring in the present depression. Research can help to make the entire organization ready for the business of normal times by pointing out changed conditions of demand since the war, new wants, and better methods of distribution. Business research, as it has developed, is essentially analysis, plus certain constructive recommendations, and it should not accept the burden of responsibility for general business conditions.

The cost of the first year of research should be estimated as closely as possible in advance. From experience in several instances, it appears that not less than twelve months should be allowed, after starting, within which to show substantial results. Too much should not be expected at the start.

It is not within the scope of this article to discuss the independent research organization that sells its service to the company which does not feel itself warranted in establishing its own research staff. As such organizations develop and are used more frequently, they will prove equally successful in helping to meet the definite needs of business executives. Their aims and methods of work are essentially similar to those of company research bureaus and their outside, independent point of view is frequently of high value to a business.

Commercial research, along with technical research, which occupies a different field, should be given the same attention in its development as any other improved method of doing business. Like a high-powered field glass it may have to be adjusted by the executive to suit the needs of his individual concern.

CAUSES OF LABOR TURNOVER

BY PAUL F. BRISSENDEN* AND EMIL FRANKEL†

THE reasons for employees leaving the service of an industrial establishment may be traced back either to purely voluntary action on their part, generally caused by dissatisfaction with the prevailing conditions of employment, or to action initiated by the employer and due either to curtailment of industrial activities or to dissatisfaction with the services of certain of his employees. Separations occurring on the employee's own initiative are referred to in this article as voluntary separations or quits; and those resulting from the affirmative action of the employer are referred to as lay-offs or discharges, as the circumstances indicate. In attempting to get some conception of the relative responsibility of the various influences bearing upon the mobility of labor it is highly important to give some special consideration to each of these three types of separations. In the figures presented here on the nature of separations, "quits" are taken to include all voluntary separations, including withdrawals due to death, marriage, etc.

Discharges nearly always mean dismissal "for cause," which presupposes some form of incapacity for the work or at least what is believed to be some defect in the character of the employee. Under lay-offs are grouped those who are "let out" either temporarily or permanently whether because of the completion of the job or because of shortage of the particular work at which the laid-off employee was engaged. Lay-offs are not voluntary separations and have nothing to do with the character of the employee. Lay-offs, moreover, seldom are made for a definite length of time and a large proportion of laid-off employees, as a matter of fact, never return to the same establishment from which they were laid off.

The figures presented in this article are based upon the results of extensive investigations of labor turnover made by the United States Bureau of Labor Statistics. The Bureau's inquiries included (1) a pre-war inquiry made in 1915 and 1916, and reporting in a general way the extent of turnover during the five-year period 1910–1915 and, in more detail for the years 1913 and 1914, not only the causes and extent of it, but also the efforts that were being made to reduce it; and (2) a war-time investigation made in 1918, resulting in an intensive report of the turnover situation for the 12-month period ended May 31, 1918. By the use of material secured by correspondence, some of the data from these field investigations were brought down to January 1, 1920. The returns from the two inquiries cover upwards of 260 industrial establishments, employing over 500,000 workers, in 17 of the most important industrial states.[1]

II

The relative extent to which separations take place under the three sets of circumstances (i.e., specified as quits,

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[1] For an official summary of the results of these investigations, see the writers' article on "Mobility of Labor in American Industry," 10 *Monthly Labor Review* 1342–1362 (June, 1920).

Table 1. Type of Separation (Discharge, Lay-off, or Voluntary Quitting) of Employees Leaving, by Years from 1910 to 1915, Inclusive, and for the 12-Month Period Ending May 31, 1918

Year	Number of Establishments	Number of Full-Year Workers	Total Labor Hours (Thousands)	Accessions	Separations			
					Discharges	Lay-offs	Voluntary Separations	Total
1910	7	23,273	69,819	15,936	2,608	514	14,230	17,352
1911	13	56,577	169,731	53,506	9,837	5,082	35,716	50,635
1912	20	72,526	217,578	78,843	13,628	4,057	49,806	67,491
1913	35	134,823	404,469	182,276	32,094	13,334	141,035	186,463
1914	50	118,195	354,585	82,585	19,565	29,737	46,660	95,962
1915	28	78,984	236,952	50,421	6,946	8,536	26,862	42,344
1917–18	108	207,303	621,909	393,164	51,400	29,833	299,157	380,390
Total	261	691,681	2,075,043	856,731	136,078	91,093	613,466	840,637

Year	Rate, Per Full-Year Worker, of—					Percentage of Total Separations Due to—		
	Accession	Separation				Discharge	Lay-off	Voluntary Separation
		Discharges	Lay-off	Voluntary Separation	Total			
1910	.68	.11	.02	.61	.74	15	3	82
1911	.95	.17	.09	.63	.89	19	10	71
1912	1.09	.19	.06	.69	.94	20	6	74
1913	1.35	.24	.10	1.05	1.39	17	7	76
1914	.70	.17	.25	.40	.82	20	31	49
1915	.64	.09	.11	.34	.54	16	20	63
1917–18	1.90	.25	.14	1.44	1.83	14	8	79
Total	1.24	.20	.13	.89	1.22	16	11	73

lay-offs, or discharges) or the extent to which accessions (hirings) have to be made, is indicated in this paper by the "rate [of discharge, (total) separation, lay-off, etc.] per full-year worker." The "full-year worker" is one regularly employed the year round. Thus, if a concern employs 500 men continuously for twelve months and 800 additional men for six months only, the number of equivalent full-year workers would be 900. Eight hundred men working six months, obviously, are the equivalent of 400 men working a full year. [For the purposes of this inquiry, the "full-year worker" is taken to be one employed 3000 hours (300 ten-hour days) during the year.] In Table 1, for example, the "number of full-year workers" is obtained by dividing the number of labor hours (obtained from factory clock or attendance records) by 3000. The rates are then computed by dividing the number of changes of whatever sort (discharges, lay-offs, etc.) by the number of full-year workers. Thus, in 1917–1918, the employees of the establishments studied left voluntarily at the rate of 1.44 for each regularly employed worker. In the same period the rate of total separation was 1.83. It should be noted here that many employers and employment managers use the expression "percentage of turnover," nearly always signifying by that phrase the number of separations per hundred employees. It will be evident at once that the (total) separation rates given in these pages may be read directly as "turnover percentages" simply by omitting the decimal point. Thus, a separation rate of 1.83 is equivalent to "turnover percentage" of 183.[2]

In Table 1, opposite page, are given the number, rate per full-year worker, and the percentage distribution of all separations, of employees discharged, laid off, and leaving voluntarily. Figures are shown for each year from 1910 to 1915 inclusive and for the 12-month period ending May 31, 1918.

The arresting fact shown in the following rate and percentage distribution figures is that the great bulk of all separations today, as in 1910, is due to voluntary leaving. It also appears from these figures that periods of industrial prosperity are reflected in relatively low, and periods of depression in relatively high, proportions of lay-offs to total separations, and that the lay-off rate is the most sensitive of the three separation rates to changing industrial conditions. Thus, in 1914, when the ratio of quits to total separations was lower than at any other time during the period covered by the figures, the proportion of lay-offs was higher than at any other time, constituting nearly one-third (31 per cent) of all separations, while in the immediately preceding year 1913 lay-offs made up only 7 per cent of all separations. The rate figures indicate that it is not alone the proportion but also the actual rate of lay-off which is thus affected by business activity and depression, the lay-off rate for 1913 being .10, a relatively low figure, and for 1914, .25 per full-year worker, which is an exceedingly high rate for lay-offs.

The discharge rate is evidently subject to less extreme fluctuations than the lay-off rate and it makes up from year to year a more constant proportion of the total separations. There appears, moreover, to be a rather definite relation between the accession and discharge rates due, possibly, to the process of selection which goes on when new workers are taken on in large numbers. The

[2] A more detailed discussion of this method of computing labor turnover will be found in an article by P. F. Brissenden on "The Measurement of Labor Mobility" 28 *Journal of Political Economy* 441–476 (June, 1920).

Table 2. Trend of Accession and of Classified Separation Rates in a Middle Western Metal Products Manufacturing Plant, by Months, from 1912 to 1919[1]

Year Ended—	Average Number of Full-Year Workers	Moving Annual Rate, Per Full-Year Worker[2] of— Quitting	Lay-off	Discharge	(Total) Separation	Accession
December 31, 1912	1088	1.23	.43	.25	1.90*	2.20
January 31, 1913...	1114	1.28	.40	.26	1.93*	2.28
February 28.......	1138	1.31	.41	.25	1.97*	2.22
March 30.........	1158	1.24	.42	.25	1.91*	2.14
April 30..........	1174	1.21	.41	.25	1.88*	2.08
May 31...........	1185	1.21	.42	.24	1.88*	2.09
June 30...........	1214	1.28	.27	.24	1.80*	2.18
July 31...........	1241	1.29	.44	.24	1.97*	2.05
August 31.........	1245	1.27	.46	.24	1.98*	2.04
September 30......	1248	1.26	.46	.24	1.96*	2.02
October 31........	1258	1.24	.49	.26	1.99*	2.04
November 30......	1264	1.21	.48	.26	1.95*	1.96
December 31......	1262	1.14	.47	.25	1.87 (*.06*)	1.81*
January 31, 1914...	1259	1.07	.47	.24	1.78 (*.05*)	1.73*
February 28.......	1262	1.01	.47	.24	1.73 (*.03*)	1.70*
March 30.........	1267	.96	.47	.24	1.67*	1.71
April 30..........	1276	.86	.49	.22	1.57*	1.60
May 31...........	1277	.75	.53	.22	1.50*	1.53
June 30...........	1293	.64	.50	.22	1.36*	1.51
July 31...........	1299	.61	.64	.22	1.48*	1.49
August 31.........	1293	.51	.77	.21	1.50 (*.11*)	1.39*
September 30......	1279	.49	.80	.20	1.49 (*.16*)	1.33*
October 31........	1260	.46	.79	.18	1.43 (*.17*)	1.26*
November 30......	1252	.45	.80	.18	1.44 (*.18*)	1.26*
December 31......	1234	.44	.81	.16	1.42 (*.26*)	1.16*
January 31, 1915...	1217	.42	.81	.16	1.39 (*.22*)	1.17*
February 28.......	1197	.41	.81	.15	1.38 (*.26*)	1.12*
March 30.........	1176	.39	.81	.12	1.33 (*.26*)	1.07*
April 30..........	1152	.39	.79	.12	1.30 (*.29*)	1.01*
May 31...........	1136	.39	.75	.11	1.24 (*.37*)	.87*
June 30...........	1088	.36	.79	.09	1.24 (*.56*)	.68*
July 31...........	1053	.38	.53	.07	.99 (*.28*)	.71*
August 31.........	1049	.42	.38	.07	.87 (*.14*)	.73*
September 30......	1050	.44	.36	.07	.87 (*.11*)	.76*
October 31........	1050	.46	.34	.07	.86 (*.10*)	.76*
November 30......	1047	.50	.32	.05	.86 (*.13*)	.73*
December 31......	1047	.54	.31	.05	.91*	1.00
January 31, 1916...	1062	.76	.32	.07	1.14*	1.31
February 29.......	1091	.92	.31	.09	1.32*	1.60
March 30.........	1111	1.17	.30	.11	1.58*	1.78
April 30..........	1128	1.49	.29	.11	1.89*	2.08
May 31...........	1152	1.80	.29	.12	2.21*	2.43
June 30...........	1188	2.00	.18	.14	2.32*	2.70
July 31...........	1225	2.17	.13	.16	2.47*	2.75

TABLE 2. TREND OF ACCESSION AND OF CLASSIFIED SEPARATION RATES IN A MIDDLE WESTERN METAL PRODUCTS MANUFACTURING PLANT, BY MONTHS, FROM 1912 TO 1919[1]—(*Continued*)

Year Ended—	Average Number of Full-Year Workers	Moving Annual Rate, Per Full-Year Worker[2] of—				
		Quitting	Lay-off	Discharge	(Total) Separation	Accession
August 31	1249	2.35	.12	.18	2.65*	2.95
September 30	1281	2.52	.10	.19	2.81*	3.09
October 31	1314	2.67	.10	.20	2.97*	3.32
November 30	1355	2.77	.09	.21	3.08*	3.60
December 31	1392	2.88	.09	.21	3.18*	3.45
January 31, 1917	1406	2.86	.08	.20	3.15*	3.25
February 28	1413	2.85	.08	.20	3.12*	3.20
March 30	1433	2.83	.07	.20	3.10*	3.25
April 30	1456	2.79	.07	.20	3.06*	3.21
May 31	1463	2.78	.08	.20	3.06*	3.15
June 30	1466	2.79	.06	.20	3.05*	3.15
July 31	1489	2.90	.03	.19	3.11*	3.36
August 31	1515	3.02	.03	.18	3.23*	3.55
September 30	1536	3.13	.03	.19	3.35*	3.69
October 31	1563	3.14	.04	.19	3.37*	3.68
November 30	1588	3.13	.04	.20	3.36*	3.57
December 31	1606	3.08	.06	.20	3.33*	3.49
January 31, 1918	1625	3.02	.06	.20	3.28*	3.45
February 28	1634	3.03	.06	.18	3.28*	3.36
March 30	1637	3.04	.06	.17	3.27*	3.30
April 30	1636	2.95	.07	.17	3.19*	3.29
May 31	1651	2.87	.07	.17	3.10*	3.13
June 30	1641	2.83	.07	.16	3.05 (*.03*)	3.02*
July 31	1645	2.73	.06	.16	2.95*	3.09
August 31	1652	2.62	.07	.17	2.86*	2.90
September 30	1654	2.60	.07	.17	2.84*	2.86
October 31	1642	2.65	.46	.17	3.28 (*.47*)	2.81*
November 30	1591	2.67	.51	.16	3.34 (*.26*)	3.08*
December 31	1560	2.67	.49	.17	3.33 (*.07*)	3.26*
January 31, 1919	1547	2.70	.49	.19	3.37*	3.40
February 28	1530	2.67	.54	.20	3.41 (*.07*)	3.34*
March 30	1512	2.56	.56	.22	3.34 (*.13*)	3.21*
April 30	1475	2.47	.67	.25	3.38 (*.37*)	3.01

[1] Adapted by permission from an article by P. F. Brissenden on "The Measurement of Labor Mobility," 28 *Journal of Political Economy*, 454 (June, 1920).

[2] These are "smoothed" rates derived (by the method of "moving averages") from the actual rates for each separate month, which latter, in turn, were computed by dividing the actual number of labor changes of each particular kind that occurred during each month by the number of full-year (i.e., 3000-hour) workers employed during that month.

* Those rates of (total) separation which are identical with the rate of replacement are marked with asterisks. In these cases all of the separations are immediately (or very soon) replaced. The unmarked (total) separation rates contain a small proportion (indicated by the labor curtailment rate shown in parenthesis) of separations which are not replaced for a considerable period of time, if at all. The reason that they are not replaced is, obviously, that they are brought about by a more or less permanent reduction of the work-force.

consequence of the stimulating effect of business prosperity in boosting the voluntary leaving rates may be seen in the high rates of total separation in spite of the fact that the lay-off rates are relatively low. In periods of depression both the rates and the proportions of lay-off and discharge are larger than in periods of prosperity. This is due to the fact that when depression sets in there are unusually large numbers laid off and employees are discharged more freely than would be the case when labor is urgently needed.

The influence of the prevailing industrial conditions not only upon the separation rate as a whole but more specifically upon the three types of separation—quitting, lay-off, and discharge, which make up this rate—is shown in Table 2, which gives the trend, from 1912 to 1919, of accession (hiring) and classified separation rates in a middle western metal products manufacturing plant. This trend, in so far as the separation rates are concerned, is shown graphically in the chart on page 658.

Perhaps the most striking fact brought out by this chart is the very close way in which the quitting rate parallels the separation rate, the margin being relatively wide in periods of depression and relatively narrow in periods of great industrial activity. At the period at which the separation rate generally declines the lay-off rate at first shows a decided upward trend but the discharge rate declines even more rapidly than the separation rate as a whole. In the period of increasing industrial activity, especially during the war period, the discharge rate runs along at about the same relatively low level, while the lay-off rate steadily declines, reaching its lowest point at a period which marks the greatest activity in this plant.

III

The form of the lay-off rate curve in the early part of the 7-year period shows that it was the great increase in the number of men laid off in the latter part of 1914 that raised the separation rate during that time so considerably above the accession rate. This shows how inaccurate the separation curve would be if taken to measure "turnover"—unless that term is to be used in reference to something entirely different from the amount of change involved in maintenance, that is to say—replacement. Almost the whole margin, in this part of the period, between the separation and accession rates is due to increased lay-offs, i.e., to a (more or less) permanent decrease in the size of the standard working force. Remarkable reductions took place during the first three-and-a-half years, in both the quitting and discharge rates. When the war began in Europe this establishment had, apparently, gone a long way toward the elimination of discharges as a factor in turnover. In the three years from 1912 to 1915, it reduced its rate of discharge from .25 to .05 per full-year worker, or 80 per cent. But during the war period from December 31, 1915, to April 30, 1919, the discharge rate increased 400 per cent. The most important pre-war reduction is, of course, in the quitting rate, because the quitters are responsible for the bulk of the turnover. This company's quitting rate went down from 1.23 in January, 1912, to .36 in June, 1915, a decline of 71 per cent. But the quitting rate increased 357 per cent between December 31, 1915, and April 30, 1919. It is quite evident, as has been pointed out, that it is the quitting rate which primarily determines the total separation rate.

The disturbing effect of war condi-

tions is very evident. Both accession and separation rates had risen in 1918 to points far above the high points of the 1912–1915 period. An examination of the accession rate and the different separation rates (shown in Table 2) indicates that the war pushed all rates except the lay-off rate well above the remarkably low points reached in 1915. Worse yet, the chart shows that it pushed all except the lay-off and discharge rates back to a point even higher than the maximum rates of 1912, so that total separation and accession rates and the replacement rate, which in this case is identical with the separation rate, rose to points never before reached within the period covered by the figures reported. It is interesting to note the effect of the war on the lay-off rate. During the period 1912–1915 it was reduced 28 per cent. War conditions apparently greatly accelerated this reduction and showed a lay-off rate of .07 per full-year worker for the year ending May 31, 1918, as compared with .31 for the year 1915—a reduction of 77 per cent. But in the latter part of 1918, the lay-off rate began to rise and the rate for the year ending April 30, 1919, stood at .67, the highest it had been since 1915. De-

TABLE 3. NUMBER OF ESTABLISHMENTS IN WHICH CLASSIFIED PROPORTIONS OF THE TOTAL SEPARATIONS ARE ATTRIBUTABLE, RESPECTIVELY, TO DISCHARGE, LAY-OFF, ENTRY INTO MILITARY SERVICE, AND VOLUNTARY QUITTING, 1913–14 AND 1917–18

Percentages of Total Separations	Number of Establishments Having Classified Percentages of the Total Separations Due to Employees Having—			Percentage of Total Separations	Number of Establishments Having Classified Percentages of the Total Separations Due to Employees Having Quit
	Been Discharged	Been Laid Off	Entered Military Service		
1913–14					
5 or less	6	8	.....	40 or less	13
Over 5 to 10	7	10	.....	Over 40 to 50	11
" 10 to 15	13	6	.....	" 50 to 60	12
" 15 to 20	6	4	.....	" 60 to 70	7
" 20 to 25	6	2	.....	" 70 to 80	11
" 25 to 30	9	..	.....	" 80 to 90	9
" 30	19	18	.....	" 90 to 100	3
Total	66	48	.....	Total	66
1917–18					
5 or less	24	34	43	40 or less	3
Over 5 to 10	39	15	49	Over 40 to 50	4
" 10 to 15	22	6	5	" 50 to 60	6
" 15 to 20	13	1	7	" 60 to 70	18
" 20 to 25	5	2	1	" 70 to 80	31
" 25 to 30	3	5	.....	" 80 to 90	37
" 30	1	5	.....	" 90 to 100	9
Total	107	68	105	Total	108

Table 4. Number and Rate Per 10,000 Labor Hours of Employees Discharged, Laid Off, Entering Military Service and Leaving Voluntarily, by Industry Groups, 1913–14 and 1917–18

Industry Group	Number of Establishments	Number of Full-Year Workers	Total Labor Hours (Thousands)	Number of Employees Leaving Who— Were Discharged	Were Laid Off	Entered Military Service	Left Voluntarily	Total
1913–1914								
Automobiles and Parts	14	31,420	94,260	11,835	17,366	....	21,580	50,781
Chemical Industries and Refineries	3	2,900	8,700	515	362	....	2,147	3,024
Clothing and Textile Manufacturing	3	2,588	7,764	447	58	....	1,434	1,939
Furniture and Millwork	....	....	....	....	....	....	....	....
Leather and Rubber Goods	4	9,018	27,054	2,066	922	....	9,117	12,105
Machinery Manufacturing	10	23,039	69,117	2,664	5,106	....	8,169	15,939
Mercantile Establishments (Wholesale and Retail)	4	7,113	21,339	243	772	....	1,322	2,337
Miscellaneous Metal Products Manufacturing	17	46,495	139,485	7,979	5,368	....	37,422	50,769
Printing and Publishing	5	5,566	16,698	857	515	....	2,307	3,679
Public Utilities: Gas and Electricity Mfg.	1	650	1,950	42	27	....	133	202
Street Railways	3	15,540	46,620	2,549	....	....	1,797	4,346
Telephone Service	3	21,801	65,403	1,713	3,924	....	5,149	10,786
Slaughtering and Meat Packing	....	....	....	....	....	....	....	....
Total	66	166,130	498,390	30,910	34,420	....	90,577	155,907
1917–1918								
Automobiles and Parts	16	68,799	206,397	14,623	10,420	10,599	93,001	128,643
Chemical Industries and Refineries	7	7,549	226,647	2,430	756	1,175	20,848	25,209
Clothing and Textile Manufacturing	4	2,098	6,294	264	22	61	2,633	2,980
Furniture and Millwork	1	275	825	26	....	30	649	705
Leather and Rubber Goods	2	4,443	13,329	902	52	440	9,813	11,207
Machinery Manufacturing	21	29,185	87,555	3,786	1,658	2,959	33,628	42,031
Mercantile Establishments (Wholesale and Retail)	5	7,362	22,086	837	3,972	522	10,432	15,763
Miscellaneous Metal Products Manufacturing	27	15,453	46,359	3,932	896	2,027	32,669	39,515
Printing and Publishing	3	1,628	4,884	90	1	158	2,909	3,158
Public Utilities: Gas and Electricity Mfg.	5	11,566	34,698	1,162	5,624	1,680	9,221	17,687
Street Railways	3	8,882	26,646	1,697	55	951	5,681	8,384
Telephone Service	10	21,338	64,014	3,354	2,362	1,353	14,795	21,864
Slaughtering and Meat Packing	4	28,725	86,175	18,306	4,015	1,645	39,278	63,244
Total	108	207,303	621,909	51,400	29,833	23,600	275,557	830,390

	Rate, Per Full-Year Worker, of									
	1913–1914					1917–1918				
	Discharge	Lay-off	Entry into Military Service	Leaving Voluntarily	Total	Discharge	Lay-off	Entry into Military Service	Leaving Voluntarily	Total
Automobiles and Parts	.38	.55	....	.69	1.62	.21	.15	.15	1.35	1.86
Chemical Industries and Refineries	.18	.12	....	.74	1.04	.32	.10	.16	2.76	3.34
Clothing and Textile Manufacturing	.17	.02	....	.56	.75	.13	.01	.03	1.25	1.42
Furniture and Millwork	....	....	....	....	....	.10	....	.11	2.36	2.57
Leather and Rubber Goods	.23	.10	....	1.01	1.34	.20	.01	.10	2.21	2.52
Machinery Manufacturing	.12	.22	....	.35	.69	.13	.06	.10	1.15	1.44
Mercantile Establishments (Wholesale and Retail)	.03	.11	....	.19	.33	.11	.54	.07	1.42	2.14
Miscellaneous Metal Products Manufacturing	.17	.11	....	.80	1.08	.26	.06	.13	2.12	2.57
Printing and Publishing	.15	.09	....	.41	.65	.05	*a*	.10	1.79	1.94
Public Utilities: Gas and Electricity Mfg.	.07	.04	....	.20	.31	.16	.11	.06	.69	1.02
Street Railways	.17	....	....	.12	.29	.10	.49	.14	.80	1.53
Telephone Service	.08	.18	....	.24	.50	.19	.01	.11	.64	.95
Slaughtering and Meat Packing	....	....	....	....	....	.64	.14	.06	1.37	2.21
Average	.19	.21	....	.55	.95	.25	.14	.11	1.33	1.83

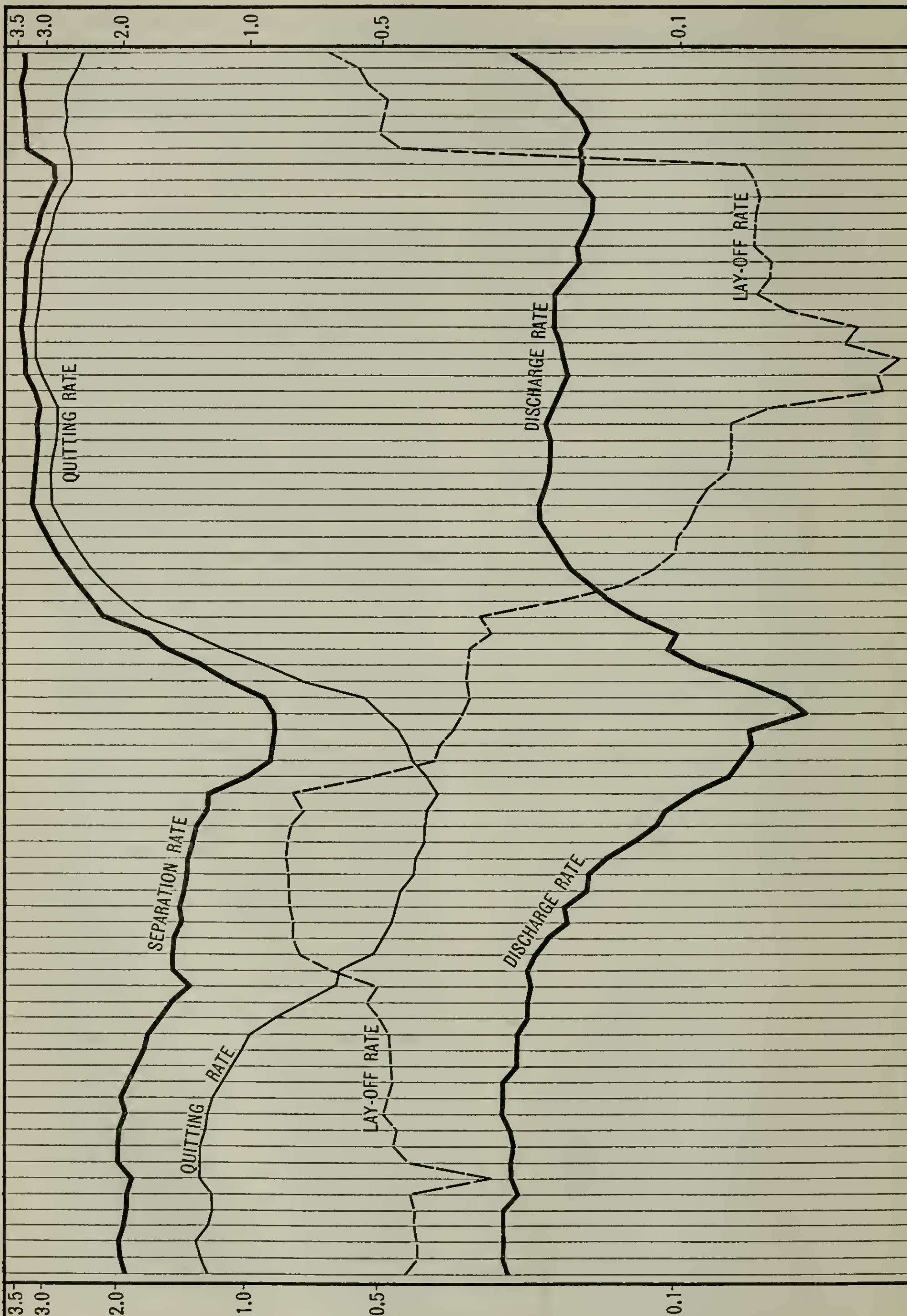
a Less than .005.

spite the increased war demand for labor the discharge rate increased from .05 in 1915 to .17 in 1918, an increase of 229 per cent. It has continued to rise, and stood at .25 for the year ending April 30, 1919.

IV

The proportions of the total separations in industrial establishments due to discharge, lay-off, and (voluntary) quitting in the period 1913–1914, and to discharge, lay-off, entry into military service, and quitting in 1917–1918, are shown in Table 3 (page 655).

It is evident that the war period brought about a considerable decrease in the proportion of discharges and in the number of establishments having a heavy proportion of separations due to discharges. The war period had the same effect upon lay-offs, but on the contrary, it brought about a great increase in the number of establishments having a heavy proportion of separations due to voluntary leaving. The mobility-rate figures of Table 3 for 66 establishments reporting in 1914 and 107 establishments reporting in 1918 indicate that discharges in 1918 made up over 30 per cent of all separations in less than 1 per cent of the establishments reporting, whereas in 1914 they bulked that large in nearly one-third of the establishments reporting. As to lay-offs, the same figures demonstrate that in 1918 they constituted over 30 per cent of all separations in less than 8 per cent of the establishments reporting, but in 1914 they made up over 30 per cent of all separations in over 37 per cent of the establishments. Voluntary quits in 1918 made up over 80 per cent of all separations in nearly half of the establishments reporting, while in 1914 they constituted this large a proportion in less than one-fifth of the concerns reporting.


3.5
3.0
2.0
1.0
0.5
0.1
QUITTING RATE
DISCHARGE RATE
LAY-OFF RATE
SEPARATION RATE
DISCHARGE RATE
QUITTING RATE
LAY-OFF RATE

How the relative proportions of discharges and voluntary separations have changed during the last few years may be seen from the figures for a large machine tool manufacturing establishment. The percentage of employees leaving voluntarily, as against the total number of separations, for each of the three years ending June 30, 1916, 1917, and 1918, and for the three-months' period, July to September, 1918, inclusive, for the day force, were 80, 81, 86, and 92, respectively. The percentages of voluntary separations for the night force, for the same periods, were 77, 82, 91, and 96 per cent, respectively. The ratio of discharged employees for the day force for the years ending June 30, 1916, 1917, and 1918, and for the three-month period, July to September, 1918, inclusive, were 20, 19, 14, and 8 per cent respectively. During the same periods the night force showed the following percentages of discharges: 23, 18, 9, and 5, respectively. Quitting became more frequent; firing much less frequent.

In Table 4, the subdivided separation rates are classified according to the various industry groups covered in the two investigations.

These figures bring out some rather important and significant facts with regard to various industries. It is evident, for example, that mercantile establishments had the minimum discharge rate in 1914 and printing and publishing plants in 1918; the minimum lay-off rate in 1914 was in clothing and textiles and in 1918 in printing and publishing; and the minimum quitting rate in 1914 was in the street railway industry and in 1918 in the telephone service. The maximum discharge rate was in the automobile industry in 1914 and in the slaughtering and meat-packing industry in 1918. The maximum lay-off rate in 1914 was in the automobile industry and in 1918 in mercantile establishments, and the maximum quitting rate was in leather and rubber goods in 1914 and in chemical industries in 1918. The figures show, furthermore, that in 1914 in the automobile group discharges and lay-offs made up over half of all separations but that by 1918 they had been reduced to less than one-fourth of all separations. In the miscellaneous metal products industries, discharges, and lay-offs constituted in 1914 nearly one-third of all separations but by 1918 they had been cut down to about one-eighth of the total separations. In mercantile establishments, on the other hand, discharges and lay-offs bulk about as heavily among the separations in the earlier as in the later period, making up nearly half of all separations both then and now.

V

An attempt to establish some relation between the particular type of separations and the relative skill of the separating employee is made in Table 5 in which are classified the returns from 22 establishments which reported mobility figures for skilled and unskilled employees separately.

The degree of occupational training and skill possessed by the employees appears to make little or no difference in the proportion of quits, discharges, and lay-offs in the total number of separations. The percentage distribution figures show that 76 per cent of the skilled employees and 72 per cent of the unskilled employees who left, did so voluntarily; 15 per cent of the skilled and 19 per cent of the unskilled were discharged, and 10 per cent of the skilled and 9 per cent of the unskilled employees leaving were laid off. The situation is quite different, however, with regard to the actual

TABLE 5. COMPARISON OF SEPARATION RATES OF SKILLED AND UNSKILLED EMPLOYEES LEAVING VOLUNTARILY, DISCHARGED, AND LAID OFF DURING ONE YEAR

(1913, 1914, and 1915; 22 establishments reporting)

	SEPARATIONS DURING YEAR					
	Number		Rate Per Full-Year Worker[1]		Percentage Distribution	
	Skilled	Unskilled	Skilled	Unskilled	Skilled	Unskilled
All Separations:	16,484	22,251	.66	1.41	100	100
Quits	12,451	16,093	.51	1.03	76	72
Discharges	2,432	4,171	.09	.27	15	19
Lay-offs	1,601	1,987	.06	.12	10	9

[1] Based on 74,199,000 skilled-labor hours and 46,980,000 unskilled-labor hours put in during year in the 22 establishments.

rate of separation, the figures indicating conclusively that the lay-off, discharge, and quitting rates, and, of course, the total separation rate, are each much higher for unskilled than for skilled workers, the total separation rate being .66 for skilled and 1.41 for unskilled workers. The subdivided separation rates show about the same relation between skilled and unskilled so that it would appear that skilled workers are about twice as stable as semiskilled and unskilled ones.

VI

In Table 6 the relation between the type of separation and the size of establishment is shown on the basis of the mobility figures of the 66 establishments reporting in 1913–1914 and 108 establishments reporting in 1917–1918.

In the period 1913–1914 there is observable quite a marked decrease in the discharge and lay-off rates as the size of the establishment increases. The explanation for this may be sought in the fact that the large-size establishments were less seriously affected by the industrial depression which made itself felt during that period. The situation is reversed, however, in the period 1917–1918, the discharge and lay-off rates being slightly higher in the larger establishments. In both periods the separation rates as a whole show a slight decrease as the size of the establishment increases.

VII

The need for definite and detailed information on the causes of labor instability is obvious. In order to devise methods of stabilizing the work force and eliminating unnecessary labor changes it is quite necessary to know the factors responsible for the labor shiftings. It is hardly necessary to call attention in this place to the fact that the causes of labor instability present a very vast and complex problem. It is obvious that a determination of these causes, because of their complex nature and the large number of factors to be considered, would necessitate an inquiry of a magnitude quite beyond the scope of the present inquiry. In discussing the

TABLE 6. RELATION BETWEEN SIZE OF ESTABLISHMENT AND TYPE OF SEPARATION (DISCHARGE, LAY-OFF, ENTRY INTO MILITARY SERVICE, AND QUITTING) 1913–14 AND 1917–18

Number of Employees	Number of Establishments	Number of Workers	Total Labor Hours (Thousands)	Number of Employees Who— Were Discharged	Were Laid Off	Entered Military Service	Quit	Total
1913–1914								
Under 1000	29	16,097	48,291	5,929	5,512	....	12,014	23,455
1000 and under 5000	29	72,634	217,902	15,335	18,880	....	31,698	65,913
5000 and over	8	77,399	232,197	9,646	10,028	....	46,865	66,539
All establishments	66	166,130	498,390	30,910	34,420	....	90,577	155,907
1917–1918								
Under 1000	67	32,453	97,359	7,107	3,868	4,110	56,414	71,499
1000 and under 5000	32	69,182	207,546	12,952	10,201	8,125	97,097	128,375
5000 and over	9	105,668	317,004	31,341	15,764	11,365	122,046	180,516
All establishments	108	207,303	621,909	51,400	29,833	23,600	275,557	380,390

	Rate, Per Full-Year Worker, of									
	1913–1914					1917–1918				
	Discharge	Lay-off	Entry into Military Service	Quitting	(Total) Separations	Discharge	Lay-off	Entry into Military Service	Quitting	(Total) Separations
Under 1000	.37	.34	.....	.75	1.46	.22	.12	.13	1.74	2.21
1000 and under 5000	.21	.26	.....	.44	.91	.19	.15	.12	1.40	1.86
5000 and over	.13	.13	.....	.61	.87	.30	.15	.11	1.16	1.72
All establishments	.19	.21	.....	.55	.95	.25	.14	.11	1.33	1.83

underlying reasons for separations we are disregarding here the separations from service due to purely industrial conditions and fluctuations in production, that is to say, forced separations, or lay-offs, the occurrence of which depends upon whether or not a particular job has been finished or whether or not industrial depression has set in. No attempt is made here to discuss that part of the labor shifting which is due to maladjustment of labor supply and demand caused by an unorganized labor market, by a defective system of labor distribution, or by maladjustment in the matter of wage levels for similar work in different localities, etc.

In view, therefore, of the complexity of the problem and the lack of information on the subject it is intended to discuss here, not the causes of mobility that are primarily inherent in the industrial community situation, but the more personal causes of labor shifting as those causes find expression in the separating employee and as they have been classified by individual employers. It is recognized, of course, that the non-industrial and personal causes are inextricably interwoven with the conditions created by the prevailing industrial situation.

In their efforts to stabilize the labor force a number of firms have made attempts to discover the causes of instability and more particularly to find out the immediate, or precipitating, causes for separations from service. They have done this on the assumption that if it were feasible to ascertain the fundamental reasons why men leave their employ, it would be possible, through the tabulation and analysis of those reasons to show the real causes of instability. It was felt, moreover, that if it were practicable to ascertain the real reasons for employees leaving it might then be relatively easy to develop a record which would be of considerable value in the solution of the employment problem in the individual establishments concerned, and so point the way toward greater stability.

Even in this individual method of ascertaining the causes for labor instability there are serious difficulties to be overcome. Employment managers and others in charge of the work force essay to interview an employee who is about to leave of his own accord. This interview is held, of course, before the employee actually severs his connection with the firm. At the interview the employer or his agent tries to secure a frank and truthful statement from the employee regarding the actual reasons which are impelling him to leave. Employers point out, however, the difficulties involved in interviewing prospective quitters. They say that it is difficult to do this even in normal times and that it was especially difficult during the war period because of the more independent attitude assumed by the workers. It is generally found that men leaving service do not like to be questioned too closely regarding their reasons for leaving and often plainly resent such inquiries. It is claimed that in many cases they give some fictitious excuse rather than a substantial reason and when pressed advance the most plausible reason they can get away with. From the standpoint of the worker it is perhaps not difficult to understand his reluctance to give full information regarding his reasons for leaving.

Such knowledge in the possession of the employer might be disadvantageous to the employee in his search for a new job and it might in other ways have the effect of restricting his freedom of movement. The employee will have observed that nearly all employment departments keep careful records of employees' past history and that employers generally keep each other informed about the movements of former employees. To the difficulties of ascertaining from individual employees the reasons for their leaving there must be added the difficulty of analyzing and classifying the results obtained. It has been the experience of men interviewing prospective quitters that even where the reason for quitting has been obtained it has not always been easy to reduce to a single classifiable category the manifold motives which may have animated the individual in his desire to change jobs. Many employment managers believe that only in the case of discharges can the causes of separation really be definitely known. This is obviously because action in the case of discharge proceeds from the management and the employee has nothing to say about it.

VIII

For the reasons given in the preceding paragraph, the figures on causes for quitting which are presented below cannot be regarded as more than an indication of existing conditions, although employers who have kept such figures have expressed the opinion that

in most cases they point definitely toward certain existing maladjustments and to particular causes that need to be attacked. In Table 7 are given the classified assigned reasons for the voluntary separation and the causes for the discharge of nearly 10,000 employees in six metal trades establishments. Some of the reasons or causes listed in a number of these groups[3] have been briefly amplified.

Table 7. Reasons Advanced for Voluntary Separation from Services of 8140 Employees and Causes for Discharge of 1439 Employees, in 6 Metal Trades Establishments

Reason for Voluntary Separation	Cases		Cause of Discharge	Cases	
	Number	Per cent		Number	Per cent
Wages—Dissatisfied with Wage Rate, Etc.	2001	24.6	Incompetent	478	33.2
Obtained Better Job or Returned to Former Job	984	12.1	Unreliable	422	29.3
Nature of Work—Too Hard, Heavy, Wet, Dusty, Dirty	410	5.0	Lazy	148	10.3
Dissatisfied	674	8.3	Careless	66	4.6
Monotony	218	2.7	Insubordination	93	6.5
Physical Inability—Sickness, Injuries, Etc.	461	5.7	Misconduct	54	3.7
Leaving Town	453	5.6	Trouble breeder	105	7.3
Return to School	131	1.6	Liquor	73	5.1
All Other Known Reasons	58	.7			
Military Service	737	9.0			
Unknown—Failed to Report	2013	24.7			
Total	8140	100.0	Total	1439	100.0

Dissatisfaction with wages is evidently the largest single reason for voluntary separation, and no doubt it is safe to assume that the wage motive in one form or another enters into most of the specified reasons for leaving. For those classified under "better jobs" the question of wages is not supposed to have been the prime motive in making the change, but the governing causes for leaving were said to have been more desirable work, the location of the plant, etc. Under "nature of work" are classed a considerable number of quitters who under the stimulus of higher wages or the "work-or-fight" order entered mechanical occupations, but not being accustomed to the grease, dirt, noise, etc., inherent in the nature of the work, constantly have shifted in the hope of finding more pleasant work. It has been stated that the relative ease with

[3] A more detailed and scientific classification was impossible because of the necessity for making a combination of the records of the various establishments, each of which put a somewhat different interpretation upon their recorded reasons for leaving or causes for discharge.

which a job could be secured during the war period made workers more ready to throw up jobs which seemed undesirable to them but which in normal times they would be reluctant to leave.

For those classified under "dissatisfied" no one specific reason seems to have been applicable. Employment managers believe that the question of wages or work is seldom a factor with this type of labor, but that its desire to shift is due largely to an inherent instability and that persons of this type are unable to assign any specific or logical reason for their desire to change. Employment managers believe these considerations to be equally true of a large number of those who failed to report before leaving. It is said that the number of employees leaving in this manner during the war period was greater than at any previous time. This is explained by the fact that the shortage of help necessitated the employment of the so-called "floater," a type of workman which in normal times would not be employed at all by these concerns. It has been found to be characteristic of employees of this type that they never stay on a job for more than a brief period, soon dropping out, without giving notice, to accept work elsewhere.

Under "incompetent" employment managers have classified certain workers who after a trial have been found to be unfit or unsuited for the work for which they were hired. It was pointed out that although these persons were willing to work they were found to be incapable of learning the work and were responsible for a great deal of spoiled work. This group also included workers who misrepresented their occupational skill when taken on, as, for example, by using certain acquired phrases that would indicate familiarity with the kind of work required of them. The number discharged for incompetency, it is asserted, increased during the war period because the urgent need of men made careful selection less possible. The management has classified those as "unreliable" whose attendance record was bad, who were habitually late in the morning, or who were prone to lay off too frequently and for trivial reasons. A good many of those discharged for being unreliable are suspected by employment managers of having looked for jobs, and possibly of having tried out jobs, in other plants, while absent.

Employment managers have classified as "trouble breeders" those who have attempted to create dissatisfaction among their fellow workers by urging or intimidating them to concerted action of some sort, as for instance, the unionizing of the shop or the presentation of demands for wage increases, revision of piece or premium rates, etc. The relatively large number discharged for being "trouble breeders" may, perhaps, be explained by the fact that it is the policy of the establishments from which the figures of the above table have been secured to deal with their industrial workers only as individuals.

IX

A somewhat detailed record of the number of people who left the employ of a large mail order house during 1917 has been compiled and is given in Table 8.

During the year 1917 there occurred in this establishment 22,700 separations. Of this number 5204 or 22.9 per cent, were due to reduction of force, 983 or 4.3 per cent due to entrance into military service. Of the remaining separations, with the causes of which we are here specifically concerned, 13,664, or 60.2 per cent of all,

TABLE 8. REASONS ADVANCED FOR VOLUNTARY SEPARATION FROM SERVICE OF 13,664 EMPLOYEES AND CAUSES FOR DISCHARGE OF 2849 EMPLOYEES, DURING 1917, IN A MAIL ORDER HOUSE

REASONS FOR VOLUNTARY SEPARATION	CASES		CAUSE FOR DISCHARGE	CASES	
	Number	Per cent		Number	Per cent
Other Positions:			Unsatisfactory:		
More Promising Position	2080	15.2	Too Slow	776	27.2
Better Salary	1109	8.1	Indifference	352	12.4
Former Position and Return to Trade	268	2.0	Carelessness	255	9.0
Going into Business	44	.3	Irregular Attendance	309	10.8
To Learn Trade	48	.4	References	56	2.0
Position Nearer Home	62	.5	Dishonesty (Suspected of Pilfering, etc.)	473	16.6
Leaving City	2047	15.0	Insubordination	327	11.5
To Marry	229	1.7	Drinking	79	2.8
On Account of Health	823	6.0	Fighting	44	1.5
Dissatisfied:			Financial Difficulties	13	.5
With Working Conditions	755	5.5	Enemy Aliens	8	.3
With Salary	221	1.6	Other Causes	157	5.5
Work Too Hard	273	2.0			
Resented Criticism	134	1.0			
Refused to Be Transferred	107	.8			
Refused Temporary Work	93	.7			
Did Not Like Supervision	67	.5			
Distance Too Great	92	.7			
To Go To School	565	4.1			
To Stay At Home	810	5.9			
No Reason:					
Worked Less Than Two Weeks Failed to Report	2527	18.5			
Worked More Than Two Weeks Failed to Report	1310	9.6			
Total	13,664	100.0	Total	2849	100.0

were voluntary, and 2849, or 12.6 per cent of all, were due to discharges.

It will be seen from the figures of Table 8 that of the total number of voluntary separations about 25 per cent resulted from employees having obtained either more promising positions or positions which offered higher wages. The number "leaving city" seems to represent a considerable

Table 9. Number, Per Cent Distribution, and Annual Rate Per Full-Year Worker of Employees Hired and Rehired and of Those Leaving for Specified Reasons in Year Ending October 31, 1918

(Department Store)

	Number	Per Cent Distribution	Rate Per Full-Year Worker[1]
Accessions:[2]			
Hired New	908	80	1.01
Rehired	223	20	.25
Total Accessions	1131	100	1.26
Separations:			
Discharged—			
Incompetent	21	34	.02
Misconduct	13	21	.01
Careless	8	13	.01
Unreliable	8	13	.01
Trouble breeder	5	8	.01
Dishonest	4	6	[3]
Lazy	2	3	[3]
Insubordinate	1	2	[3]
Total discharged	62	100	.07
Laid off	431		.48
Left voluntarily:			
Wages	228	21	.25
Family Moving	154	14	.17
Other Position	135	13	.15
School	127	12	.14
Ill Health	117	11	.13
Needed at Home	75	7	.08
Dissatisfied	48	4	.05
Vacation; Needed Rest	45	4	.05
War	39	4	.04
Marriage (Women)	24	2	.03
Work Too Heavy or Disagreeable	22	2	.02
All Other Reasons[4]	61	6	.07
Total Left Voluntarily	1075	100	1.18
Total Separations	1568		1.73

[1] Based on standard working force of 899 full-year workers.
[2] For nine months ending Oct. 31, 1918.
[3] Less than .005
[4] "Leaving city," 33; "going into essential work," 6; "going into business," 3; on account of "housing conditions," 2; reasons unknown, 17.

proportion of the total number leaving. It is very doubtful, however, whether this number really left the city; it is quite likely that in the majority of the cases it was only a proffered excuse. Those who were dissatisfied for various reasons number 12.8 per cent of the total. A significant commentary on the whole stability situation in this establishment is implicit in the rather large number of persons who simply dropped out of service without giving any notice of leaving either in advance or subsequently. Nearly 30 per cent of the total number leaving voluntarily left without giving notice.

Among the establishments whose labor turnover experience was examined in some detail by the Bureau of Labor Statistics was one of the largest department stores on the Pacific coast. This store went to no little trouble to ascertain the reasons for employees quitting and to tabulate not only the number quitting for various assigned reasons but also the number discharged for specified cause, assigned, naturally, by the company. This concern also kept account of the proportion of those rehired to new accessions. A full analysis of these records is given in a special report[4] published by the Bureau of Labor Statistics on the turnover experience of this department store. The tabular summary which appears in that report is herewith reproduced, with some modification, in Table 9 on page 665.

[4] "Employment Policy and Labor Stability in a Pacific Coast Department Store," by P. F. Brissenden, 9 *Monthly Labor Review* 1399 (November, 1919).

The only classification of the accessions is into "hired new" and "rehired." During the nine months for which data were available, it appears that 20 per cent of all of those hired had been in the company's service at some previous time. Among the reasons assigned for discharge the most frequent seems to have been incompetency, "misconduct," carelessness, and unreliability. Among those leaving voluntarily the most prevalent reasons given are dissatisfaction with wages, desire to take another position (which in some cases is desired because of the higher wage offered) family moving out of town, going to school, and ill health. Using the last column as a basis, it is evident that during the year reported, for each 100 full-time workers employed there were 101 entering the store as new employees, and, in addition, 25 former employees rehired. Turning to the separations, which are our primary concern here, it appears that, for every hundred full-time workers employed, there were 173 separations; 7 of these were discharges, 48 were lay-offs (on account of lack of work) and 118 were quits. Scrutinizing the latter more closely, we find that 25, for every hundred employed, quit on account of unsatisfactory wages, 17 quit because the family was moving, 15 on account of another job, 14 to enter school, 13 because of ill health, 8 because needed at home, 5 because "dissatisfied," the same number for a vacation (without pay) or a needed rest, and 4 for war work.

MERCHANDISING BACKGROUND OF MAIL ORDER DEPARTMENTS

BY DANIEL H. STEELE*

THE activity of a mail order department in a wholesale mercantile house goes far deeper than its superficial task of keeping a stream of catalogues and circulars in the mail. The mere bombarding of a market with sales literature, however forceful, can achieve no lasting result if the department that directs it is off at a tangent to the merchandising policies of the house as a whole. There must be effective liaison between them.

An unusually successful salesman was called in from the road one day to organize a new department for mail selling in a long-established wholesale dry-goods house. He brought to his new position more optimism and enthusiasm than a lawyer for the defense, and an intimate knowledge of the needs of his new customers. But it required quite as much of merchandising knowledge as of salesmanship, and unfortunately the foundation of his new department lacked mortar here and there. He found it difficult, by mail, to wink at the buyer of The Model Dry-Goods Store and dig down in the corner of his trunk for a "special bargain" and say, "I saved it just for you, Joe." He discovered that his principal appeals to the mail order trade depended on something more than his ability to "pry loose a little gob of stuff to offer at a price."

It is fundamental that the methods to be applied to the creation of business by mail be co-ordinated by the merchandise manager and the sales manager, so that they receive the necessary backing to insure the co-operation of every department. Without such backing, buyers, unfamiliar with the possibilities of an outlet so new to them, are likely to overlook it in their merchandising plans.

In an exclusive catalogue house, of course, this co-ordination of the buying staff and the catalogue department reaches its highest development, the requirements and limitations of the catalogue being a primary consideration. In the regular wholesale house, on the other hand, the mail order department must be considered as an auxiliary sales instrument and its growth contingent upon its functioning in harmony with the principal distributive machinery of the house. Nevertheless, buyers must recognize the mail order department as an additional outlet for stocks, and must study to provide goods which that outlet will readily absorb.

Particularly during times of depression when prices of goods are momentarily changing and when salesmen, who can reach only a few customers daily, can scarcely make expenses on the road, the mail order department has a brilliant opportunity. During October, November, and December of 1920, for example, many houses called their salesmen in from the road, and too often their only contact with their customers was through the irritating correspondence of a credit department, overworked and harassed by returned goods and cancellations. During this same period wholesalers were making frantic efforts to liquidate huge stocks of winter merchandise in the face of mild, unseasonable weather.

* With Wilson Brothers, Chicago, Ill.

Whole stocks of regular goods were cut to less than half price, far below any anticipated replacement value, and offered to all comers regardless of their credit standing. They had to be disposed of before inventory. Houses which had efficient mail order outlets were able to "visit" their trade by mail at every change in the kaleidoscopic situation. New prices and special offerings could be made with comparative economy and telling effect—for the retailer was far at sea in his merchandising craft, and hungry for information and advice and help from his wholesale friends. The actions of wholesalers in these trying times enhanced or destroyed their good-will as a tremendous amount of normal advertising effort could hardly do.

It was noticeable and significant that the prices the retail trade were familiar with and used for comparison were principally those of lines distributed through mail order channels. And the chance was golden for far-sighted jobbers to point the way, when retailers were groping, by constructive educational work in outlining effective merchandising policies. All of these things emphasize the peculiar necessity of an integral relationship between the mail order department and the merchandising branch of the business.

But it is not always easy to develop this relationship, for the training and equipment of the buyers have progressed along somewhat different lines. Methods of selling, the buying habits of the trade, seasons of sale and shipment and countless trade customs that have grown up in the business must somehow be adapted to the needs of the new department, and buyers must bear in mind these differences in building their lines.

In normal years a very considerable portion of the business of the regular wholesale house is booked in advance, the salesmen covering their entire territories several months in advance of the time the goods are put into consumption. Goods are shipped "on arrival," or at the convenience of the wholesaler, at any time during several months before the opening of the season. Buyers provide stocks so that deliveries can be made at this time, and an additional quantity that they judge will be able to care for repeat orders and the expected immediate business.

Can the mail order department expect any considerable success in soliciting advance business? Well, the buyer doesn't quite know, but doesn't appear very optimistic about it. The mail order department can seldom draw from its experience at the outset to confidently advise the buyer. They must study the matter together and follow their combined best judgment.

It is natural, moreover, since salesmen have been the only source of business, for buyers to measure their outlet only in terms of the salesmen. "How many salesmen will push this article?" "How many of these housedresses can Simpson sell?" These are the questions they ask in estimating the salability of an article, rather than determining more analytically the quantity a certain class of trade or territory can use. Of course their mental process is not so cut and dried as this, but it is very easy for them to become cramped by the restrictions of their outlet and hesitate to bring out new things their judgment prompts unless they are sure they can "sell them to the salesmen."

Where the salesforce is not directed on a scientific basis, it is very difficult for department heads to influence to a sufficient extent the sale of particular numbers, or to have preference given to this style or that. The mail order department is particularly adapted, as is a specialty salesman, to emphasize

the items most desirable to push. It can teach its customers the facts about lines which the dealer has been used to buying on "faith," and can devote itself to educational work that the salesman has not time to discuss. The proper application of mail-selling methods can go a long way toward curing buyers' insomnia caused by worrying about overstocks, because pressure can be applied to just that part of the load that is not moving properly. Stagnant parts of departments can be built up to healthy activity in a way that salesmen without special training or unusual incentive might not easily do.

Another handicap in the merchandising experience of many of the buyers of the regular wholesale house is the attitude which the house has probably taken hitherto toward mail selling. It may have been the custom to circularize the trade only when they had broken or closing lines or merchandise to offer at an exceptionally low price. It has not infrequently been the case that the mail order trade consisted of general stores out in the Styx, and was used as a dumping ground for unsalable, out-of-style goods. Such an attitude prejudices the success of the mail order department from the start. The buyers become accustomed to offering only "job-lots" through the mail and tend to neglect the opportunity to promote the sale of their regular lines.

If the wholesale buyer is guided entirely by what sold last year and feels the pulse of the market only once each season, he is probably passing over dozens of chances to quicken his turnover by easing in quantities of specially offered goods at special prices. As a matter of fact, a very large part of the buying information he needs should come from the outside; from observation of competition, from contact with customers, and from a shrewd interpretation of the effect of events in the world of commerce, generally, on his particular line. The mail order department can be effectively used in reconnoitering the market and as a barometer of demand.

II

The control of the merchandising policies behind mail order selling must naturally vary with the character of the house in question, but there are a good many principles which apply throughout.

It is essential, in the first place, that certain goods be supplied which can compete on a price basis with other merchandise likely to be offered to the mail order trade by competitors. Many jobbers, who have been developing their lines for years, consider the numbers that they have been carrying as standard. They reject, or consider heresy, any suggestion to add inferior goods which might be quite as honestly made and which could be sold at a popular price to the catalogue customers. However commendable this attitude may be, it is true that in many communities and in many stores "standard" goods are not worth the premium they carry because the demand is for very low-priced goods and the consumer is familiar and satisfied with the quality of the "sub-standard" merchandise.

This does not mean that the cheapest goods obtainable need be carried or, necessarily, cheaper numbers than are carried in the regular line. The character of customers solicited, competition, and the merchandising policies upon which the line is built must govern that. One pioneer in the field of wholesale mail order merchandising believes in offering special merchandise at cut prices—loss leaders, conspicuously

featured, to convey the impression that its entire stock is low priced. Other wholesalers might find that this policy would be harmful to their standing with the trade, or for other reasons would not fit into their merchandising scheme. It is possible, however, that an analysis of their market would indicate other ways in which *their* line could be strengthened for mail order presentation.

The work a buyer does in developing his line for the catalogue should benefit him in his merchandising as a whole. It is probably true that most merchandise men feel the lack of closer contact with their customers. They are obliged, many of them, to depend too largely upon judgment or "hunch" in their buying, and while they are on fairly safe ground because of their records regarding numbers carried for several years, they are forced to get much of their live information of the market at second hand.

Someone has said that the market is made up of people who desire a certain commodity, or in economic terms, "effective demand." A market is an opportunity to sell something, and it is impossible to study the characteristics of a commodity apart from the market. The mail order department can enable the buyer to study his product intimately in connection with its market.

Very often existing lines may be found to be splendidly adapted to catalogue selling. It may be inadvisable to make a single change, other than to reserve catalogue stocks of regular numbers in the line. But care must be taken that many of the liberties that jobbers are accustomed to taking with customers' orders be guarded against in handling mail orders.

Goods must be available for immediate delivery, *without substitution*, upon receipt of mail orders. The majority of these orders are prompted by immediate need, and the retailer does not appreciate a letter saying the item he required is sold out. Neither does he care to accept a substitute for the number the catalogue has sold him, although he may not return it, because of the inconvenience and delay. Where a salesman is on the ground every few months, and can re-sell the customer on any point of service that has been disregarded and adjust any misunderstanding, this matter of delivery without substitution is not so important. When printed matter substitutes for the salesman it is vital.

The effect of mail order methods on wholesale turnover depends entirely on the marketing processes of the business and the way in which they are applied. Conditions are almost certain to differ in every case. The jobber can use his mail order outlet to influence his turnover in exact accordance with the principles he preaches to his retail trade in using their display facilities, selling plans, and advertising media to quicken *theirs*. His study of the movement of his stock may disclose certain numbers or classes of goods that are seemingly almost dead, but which can be revived by picking certain spots in the market and offering them in a special way by mail.

Where the period of time over which merchandise is sold is shortened, as is the case in mail selling, turnover is automatically quickened. This is, of course, governed and limited by the way in which stock is supplied and business is solicited, but the opportunity exists to compound the activity of the mail order stock.

There is a certain small jobber of drygoods who did a business of nearly two million dollars last year on a stock of less than a quarter of a million. Although he didn't use the aid of the mails to any great extent in reaching this volume, there is a lesson in his method

for the mail order department. Being a shrewd salesman, and keeping himself unusually close to his own market, he was able to sell a considerable part of his goods before he actually purchased them. He was very keen in recognizing places where he could sell different blocks of goods that were continually being offered him at tempting prices. And it is here that the mail order department has the same opportunity. It is not likely that the mail order department of a larger and better established house would care to go very far in this direction, but nevertheless, it is possible, and probably very good merchandising, for buyers to recognize similar opportunities, which *would* apply, to turn good "buys" which are offered them into profit for their customers and their house.

This seems almost paradoxical to the story told above of the salesman's mail order efforts, but really emphasizes the importance of the merchandising phase. For the permanence and progress of the mail order department it is essential that the backbone of its selling strength be spent to promote the sale of regular goods at regular prices. It is advisable that the selling campaign be planned long enough in advance so that it has continuity and a definite cumulative effect. Retail buyers may be made to familiarize themselves with a line by mail, if expertly presented, almost as thoroughly as by having it shown them at infrequent intervals. But the special offerings have their place as well. They are the appetizers which sharpen the appetite for regular goods. The retail buyer buys in the market he is most familiar with. Familiarity with a new selling scheme for automobile tires, introduced entirely by mail, changed the tire buying-habits of the majority of the tire dealers in this country.

There are jobbers whose catalogues are the result of some clever printing salesman's oratory. Their catalogues are hardly more than a "nice printing job," and the distribution of them an effort to avoid antagonizing the salesmen. In such houses the mail order department is simply a clerical division of handling orders, and any discussion of its merchandising background must be confined to possibilities.

It is conceivable that they may desire to limit their mail order departments largely to propaganda. It cannot be assumed that every wholesaler is anxious to develop such a department to its fullest extent, or for the same purpose. Existing conditions or the policies underlying the business may dictate that it operate in very diverse ways. The flexibility of mail selling methods, however, makes it adaptable to all these conditions. It must take things as it finds them, and fit itself into the present system, rather than seek to change them to methods more efficient for itself.

As the moral follows the fable, one axiom may be stated in closing. The returns which any house may expect from its mail order department will be in exact proportion to the interest and co-operation the merchandise departments are willing to give to it.

PRESENT-DAY TASKS OF MANAGEMENT

BY P. L. BURKHARD*

THE future of American industry will be exactly what management chooses to make it. Foresight or lack of foresight will determine the growth of industry and the direction in which such growth will lead us. There are two routes wide open before us, two roads over which industry can go. One is via the present capitalistic system. The other road we cannot classify. It may be socialistic, or it may be to some degree Sovietism. This is an unknown quantity. Where it would lead us is but mere speculation. Whether some of us can go one way and some another it is impossible to say. It may be that a promised land lies ahead of the unknown, and again it may be chaos. To be too positive either one way or the other is foolish. Who knows?

Let us reflect back, through all history. Hasn't the man who has clung to his old beliefs, who was always positive and unyielding, been the man whom evolution proved to be a liar?

Industry must go forward. It will, not because of what we as managers do, but in spite of what we do. If we think clearly we shall guide industry. If we look backward and ignore the changes which the twentieth century has wrought in human thought, some one else, will be at the helm. The forces at work today are the same forces which have always been at odds. Capital, as labor and some managers regard it, and labor, as this capital regards it. The misunderstandings between capital and labor, are not of each other alone, but of each other and themselves. The man who has a dollar to invest fails to comprehend the meaning of the dollar and misunderstands the man who invests his time against the invested dollar. The man who works does not understand the significance of the invested capital, nor does he understand himself.

Class warfare is a bugaboo. It is a ridiculous theory. As a theory it has been taught widely. It receives credence because to so many men there seems to be no solution to the problems which have always nourished a spirit of revolt, unemployment, long hours of work, low wages and a resultant low standard of living, except by ousting the privileged classes. Economic warfare is a stern reality. Millions of people have felt its effects. It is so easy to place the blame upon what seems to be a class, the employers, a class which never seems to know want or hard times. Unfortunately for years employers have felt themselves to be privileged. They didn't understand themselves. They have recognized no obligations to the workers, but have understood only the guarantee of property rights. Misunderstanding even today is so general. It is a disease which is hard to throw off.

The change in human thought is very marked today. There are thousands of managers who look forward to a partnership between employer and employee, not so much in fact as in spirit. The tendency is toward a common understanding. On the other hand are the employees, either members of trade unions or non-members. Their ideas for the most part are as different from each other as their numbers, which may also be said of the em-

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ployers. What they want, with the exception of the union leader, they don't know. The union men want closed union shops. They don't want partnerships unless the unions are to be the partners. The non-union men either want to join a union, do not want to join, or are indifferent. The employer either wishes an open shop or a closed shop to union labor, or is indifferent. There is very little objection today toward unions as long as they do not attempt to run away with a business. Most shops employ both union and non-union men and no questions asked. The big question in this regard is simply—Where is it all leading?

II

Management will be the storm center of all controversy, and that there is to be controversy it is foolish to deny. Good management will tend to reduce and eliminate trouble of every character. Bad management will concern itself with attempting to wipe out effects, the symptoms which appear on the surface, such as strikes, attempts to organize, and agitation. The present economic system is in the hands of management. In the past there has been little attempt to find the causes and correct them. There has always been too much time spent in stamping out the effects.

Instead of talking about partnership between employer and employee the good manager will reorganize and reconstruct his business in the light of the new forces, in compliance with the laws of economics and the principles of effective productivity. A true partnership will then result, not so much in the division of profits and the absorption of losses, but based upon a true understanding, a system of measurement and a reward-incentive. Partnership implies confidence, respect, and co-operation. The creation of committees and the splitting of profits do not necessarily signify a partnership. It all depends on the thoughts which are back of the move. What motives are behind the creation of the various schemes? Is it a smoke screen to confuse labor and yet retain the *status quo?*

This is a plea for a true partnership, the kind of partnership which will justify the capitalistic system. There are many who maintain that it does not need justification, that it is today a perfect system and its means are warranted. There have always been men, rulers and masters who have maintained that the particular system of which they were a part was supreme. Yet they have died and newer generations have made improvements and changes which would have sentenced them to death had they lived and worked earlier. The present system, good though it is to most of us, cheats us all. It is based upon waste, and inefficiency is inherent to it. A change is coming. If management fails to make the changes, newer forces will make them, and it will not be surprising if these new forces come from the ranks of labor, from the trade unions. And why not?

The parties to the partnership, to all industrial activity, are four in number. They have been pointed out repeatedly as the investor, the manager, the worker, and the public. Capital and labor are but terms, obsolete in a true analysis of the parties of the economic system. The investor may be the management but whether management possesses the ownership control of an industry or not he should be apart and above the consideration of property rights if he is to be a true partner. The public is the aggregate investor, manager, and worker. A partnership has always existed between these parties,

only due to ignorance each has always been on the lookout for a vantage point, each ready to cheat the other, each holding back and expecting the other fellow to carry the burden. That is the great failure of the present system. It has been due to selfishness and greed and lack of understanding. A recognition of the obligations, duties, and responsibilities of each party must be acknowledged.

III

It is to good management that the present system must look. Management wields the influence and holds the reins. In management is vested the power and intelligence to bring all parties together so that the system may endure. The aim of such partnership should be to produce the maximum output at the minimum cost in time, energy, and materials with a return to investor, manager, and worker proportionate to the true value of each, resulting in minimum price to the public and maximum happiness and satisfaction to all. This means that management must first get back to fundamental laws and principles and reorganize thought upon a sound economic basis.

The economic warfare between employer and employee must be shelved. It has been unavoidable and inescapable to this time due to the inadequacy and unsoundness of the structure upon which industry and commerce were founded.

What else has it been but warfare when for years capital has done everything within and without reason to get all it could for capital? What else but warfare when labor has done everything in its power to get all it could for labor? Is it strange that while this back and forth, take-this take-that spirit governed the actions of all men alike, that prosperity should be followed by depression, that first one would be on top, then the other? Too much emphasis is put on the assertion that the present depression in business is the outgrowth of the war. If it had not been for the war the banks would have been to blame. Or if it was not the banks, it would have been a fire, an earthquake, or the failure of a department store. Yet back of all these things it may be noted that depressions follow periods not of prosperity alone, but periods of inefficiency, periods of trying to get something for nothing, or trying to give as little service as possible for a dollar whether it be manufacturer, merchant, or employee.

There are innumerable evidences of warfare today. Who is to blame? It surely is no one in particular but all of us together. Employers blame the employee. Unions, speaking for a few million employees, blame the employer. This is more evidence of misunderstanding. The employer in many cases wants to settle it by fighting. The unions are willing to settle it by fighting. What is to be the answer of management? Do we fight? Unions cannot be blamed too severely. Many of us would refuse to work under the conditions which existed before trade unions sprang into existence. We have the trade unions because employers were dishonest with their employees. We shall have trade unions just as long as employers are dishonest, and we may have trade unions should management by inefficiency render the present system to obsolescence.

Fighting isn't going to do any good. It will but exaggerate present economic wastes and hasten a change in favor of unionism, even though employers here and there do win strikes and lockouts. If management does not want trade unionism, if it decides that collective bargaining is a privilege of a partnership to which the employees are

partners, it can destroy unionism. But to destroy unionism means that management must pay the price, the terms of which are the recognition of a partnership as above stated. Unions exist by virtue of the fact that they fight the battles of the workers, and even though they are not authorized to fight for all the workers, all have benefited by their aggression. Trade unions have justified themselves because they have taken the side of labor and labor needed a champion. Unionism will die of its own accord when workers are recognized as partners to industry and are treated accordingly. Unions will have served their purpose. This may be a long way off, it may never come, but if it does not come, that is, if management does not recognize the partnership of labor, unions will absorb more and more power. Union officials can be spectacular when management gives them the opportunity and what better opportunity can the union chiefs want than a war against unionism or a failure to recognize the rights of the employee? What proportions will this spectacular stunt assume? Is it not possible that failure to recognize the employee will so strengthen unionism as to make it a simple matter for trade unions to take over and operate industries? Such a possibility was once remote, today it may happen momentarily.

IV

A change whereby present-day management as such may be extinct is greatly encouraged by the attitude and actions of many employers. The questions relative to this possibility are:

1. What attitude and actions will tend to encourage a change?
2. What attitude and actions will tend to perpetuate the present system?

Inefficient management will do more to break down the existing system than will any other one thing. It won't be the aggression of union labor but the failure of management which will cause a change. There are several conditions which will tend to encourage a change, of which possibly the most important will be lack of understanding and absence of good-will on the part of management towards labor in particular, and the other partners in general. In other words, it will be a failure to recognize the partnership and the obligations to the partners.

A symptom of this will be the action of certain employers to take advantage of the present business depression. The pendulum is swinging from the side of labor to the side of capital, in fact, it has already swung. Taking advantage of labor now is suicidal. Yet in many instances the desire is expressed, and if not expressed it is keenly felt. Management should recognize that the pendulum swings both ways. Labor failed to realize this during the war and during the year and a half of inflation after the armistice. Labor took advantage of the situation then but only because experience had taught her that this was the thing to do. Getting back at labor, trying to whip workers into line by the fact of an empty stomach, only add to the momentum of the pendulum and the backward swing will be the more severe. Management should strive to arrest the stroke, stop it altogether if possible and try to maintain an equilibrium. It pays to be generous in times like these.

Fighting unions by open shop campaigns which really propose to destroy unionism, refusing to sell materials to concerns employing union labor, will not have the effect desired by the employers interested in such warfare. It will only strengthen unionism.

As soon as business begins to pick up labor will again have the advantage. This should not be forgotten or overlooked. The ideal time to formulate a labor policy is now. This is certainly not the time to scrap all the progress made during the war era. Nor is this the time to fight union labor. The reaction will simply be that employers always hit a man when he's down, a very good slogan for labor to adopt should there be any attempt, organized or otherwise, to destroy unionism now. It simply cannot be done that way. Extensive unemployment and reduction in wage rates will also have their bad effects and will afford agitators splendid opportunities for pointing out the inefficiency of management.

Union leaders are better strategists than most managers. They are mostly self-appointed but they earn their way, they justify themselves by their accomplishments. If in the past, trade unions have been unsound in advocating restricted production, that does not indicate that they will continue to do so in the future. It is a weapon which is wielded when it is felt to be necessary. As trade unions become stronger they use better judgment, and they have shown a greater capacity for changing from bad practices to good ones than has been shown by many managers. At first they were directed by expediency, today they adhere closely to principles. If management does not solve the problems of industrial economics the labor unions will. It is largely up to management whether they or union labor will run American industry.

We have previously mentioned the second route over which industry may travel. What route it may be or where it leads we cannot know. It may be that union labor will break into business. For years trade unions have fought the possibility but there is such a tendency today. If anyone doubts this tendency it is only necessary to point out that today labor unions are engaging in various lines of business. The most marked is the banking business. There are several banks owned by trade unionists. The Brotherhood of Locomotive Engineers Co-operative Bank in Cleveland is contemplating a skyscraper for its new home. The Brotherhood already owns and operates one of the finest office buildings in Cleveland. The Mount Vernon Savings Bank of Washington, D. C., does a good business, owns its own building and has financed several industries recently.

V

An indication of the change coming over labor may be seen in the now forgotten Plumb plan of the Brotherhood of Locomotive Engineers. It is forgotten to many of us, but the possibility of controlling the railroads is still in the minds of the officials of the Brotherhood. What the next move will be no one outside the circles knows but it will not be surprising if within a few years the Brotherhoods will have acquired a substantial majority of the outstanding stock of the railroads. Having failed to get the government to buy the roads why shouldn't they buy the roads themselves? By so doing they cannot be called Bolshevistic, a term so commonly applied to the Plumb plan. This Plumb plan was a test proposition, to take the temperature of public opinion as to employee ownership. It didn't take very well under the procedure as suggested but no one can complain if they buy control. It has been ably pointed out that at the present market price control can be acquired within very few years out of the increases granted the rail workers since the war ended.

Co-operative enterprises are springing

up throughout the country, financed by union labor funds. From this it should be evident that union labor has learned rapidly. The unions are preparing to fight capital with capital, and who shall stop them. If unions can offer more to labor than management can, management will pass into the hands of union labor.

Yet labor, that is, employees, do not want control. It doesn't care for a voice in management as such. Nor does it want things done for it. Labor wants only what it is entitled to, and it will be assured of getting its rights when the partnership is recognized. If it is not recognized the tendency will continue in its present direction.

The Railroad Brotherhoods want to run the railroads because they are sincerely convinced that they can run them better than they are run under present ownership. There are men in every industry watching with cynical eyes the inefficiency of the shops and wondering whether they could run a business with any less intelligence.

Labor feels it is entitled to continued employment, pay in proportion to applied skill and effort, and commodity prices within reason. These wants are all economic. If management can provide these things employees will begin to have more confidence in management. This confidence is lacking today because of the inefficiency of management. Inefficiency always means periods of unemployment, lower wages than should be paid and higher prices than commodities are worth. Efficiency of production is one of the obligations management owes to its partners. Many employees realize that, unless the unit cost of the product is relatively low, in the long run they have to pay for it. It isn't the efficiency of labor, but the inefficiency of management that requires the closest scrutiny under reorganization. When employers overlook the most evident opportunities for savings it is not strange that employees grow inefficient. They become inefficient through example. And after a workman has recommended a dozen or more changes to cut out apparent wastes he becomes discouraged when nothing is done about it, and keeps his thoughts to himself.

Union labor can readily make capital out of the inefficiency of employers. Radicals thrive during periods of unemployment. The manager who holds himself aloof encourages the agitation which wishes to relieve him of his business. The solution lies in giving the workers the facts. Industrial democracy as a plan of management has been discussed so thoroughly that it is a topic on which anyone can debate at length, affirmatively or negatively, as pleases him best. It may or may not be good business to have shop committees or a house and senate, but in any event it surely is essential today that men be sold company policies and ideals. This is no time to attempt to put things over without the consent of those affected. Democracy is surely needed to the extent that the consent of those affected be solicited before action is taken. When a manager goes to his men with the facts, pointing out the human limitations which have made a change of a given nature necessary, and undertakes to place the men in his position and ask them to act, his program will be carried out. This is the kind of partnership which will bring men together on a common ground of understanding and confidence. It is first necessary that the men be given the facts and confidence will naturally follow.

The second condition which will tend to encourage men to take the unknown and untried route will be the inability to measure any or all forms of industrial effort and activity.

VI

In considering industry as a whole it is remarkable to note that there is no common and accepted unit of measurement by which the effort of a man or the entire force of men in the factory can be measured. Machine capacity is too frequently unknown, but since machines are in most cases entirely subordinated to the capacity of the human being in charge of the machines, it is far more important that the effort of the human element be reduced to a common unit of measurement.

This is essential to the permanency of the present economic system because it is absolutely essential to maximum efficiency and the present system will not endure unless it becomes more efficient than it has been. A part of the price which must be paid by management if the capitalistic scheme of control is to be perpetuated is an increased efficiency through which the wastes which are today being paid for by the public can be eliminated. A plan of measurement which will permit increased efficiency is not only desirable, but is by stern fact a necessity in industry.

If management carries this fact to a logical conclusion the time will come when human effort will be measured by the same unit in the machine shop, foundry, rolling mill or any other shop where manufacturing is carried on. And why not? It makes no difference into what line of activity we go today, we find that 36 inches equal one yard and 16 ounces equal one pound. These systems of measurement have been standardized. We measure power by horsepower or by kilowatts. Yet few plants have a gauge for the man-power, the most important item which goes into the production process.

There is a system, of course. There always has been. Industries in this country and in Europe, some since the early days of the Industrial Revolution, have adopted the unit of measurement which time has given, the sixty second minute. Many engineers have utilized the minute as a unit of measurement through time standards. It is surprising that so many managers today cling to a system of measurement which calculates pieces. Pieces like wages have taken up altogether too much of the thought of business men. Both pieces and wages are incidental. It is uneconomic, to say the least, to figure pieces against a dollar, or a dollar against so many pieces.

Standards should be set in time values, computed in time values and paid in time values. It means much more to set a standard in relation to the hour, as for instance, 60 minutes' work per hour, than to set a piece rate of 3 cents a piece. The aim of management should be to get eight hours worth of work for every eight-hour day a man spends in the shop. Most managers have little definite idea as to what a day's work is. How are they to know, when production is computed by quantity, and quantity varies with the operation?

The logical solution is to establish standards in time values, not 3 pieces an hour or 70 pieces per hour, but 60 minutes' work per hour. This reduces all effort to a common denominator of time. The setting of standards must determine the relation of quantity and quality to the time value. Sixty minutes' of work per hour might mean one piece or it might mean 591 pieces. In any event the standard of 60 minutes per hour offers a flexible means of computing relationship between men, jobs, departments, and even industries. The All-American standard should be 60 minutes of work per hour. The minute might be designated as a unit or a point, it matters little. But what

does matter is whether or not the reports coming in from department 41 show 60 minutes' work per hour, or only 30 minutes of productive result.

As the individual productivity can be gauged by the minutes produced per hour, so can the department, or the entire shop. Standard for a man working eight hours would be 480 minutes' worth of product. Departmental standard would be computed in the same manner, the total number of man hours and the total number of hours of product.

There is a natural question as to how standards can be so established. Time studies must naturally be made. Standards set on record of past performance are 99 times out of 100 incorrect. In establishing time standards the actual time of an operation must be ascertained, that is, all waste and unnecessary motion eliminated. It is not to be expected that this actual time can be attained and maintained. It cannot. The same human limitations previously mentioned affect the operator or worker no matter what the job or operation. Actual time does not include the reasonable and necessary tolerances, the rests and delays which are occasioned by a human being. It is necessary in establishing the standard that a margin be allowed. This percentage of time should be added to the actual, the result being a true standard which the manager has the right to expect from everyone in the shop.

The question may be raised as to how labor would regard this, and it may be well to note that labor trouble is unknown in plants where time values have been established in this manner. The worker respects efficiency when he comes to understand it, and reducing effort to time value facilitates such understanding, but this brings us to a third condition which tends to encourage a change from the existing system, the failure to reward labor in its true proportion for applied effort.

This goes hand in hand with the plan of measurement. A slide rule, figuratively speaking, which permits the measurement of industrial effort should contemplate a method of incentive and reward. In other words, the wage plan should seek to reward in proportion to the effective productivity of the individual. There should be an honest effort to reward the worker in proportion to the result he obtains, and a full reward which will represent his true proportion of his productive value.

When an employee is operating under time standards it is a simple matter to calculate his productivity. If he produces 70 minutes' worth of work per hour he should receive pay for 70 minutes' work. This provides incentive and it insures protection to the operator.

If the employee is to receive the true proportion of his value to the industry it is essential that this value be determined. Time standards should be set with the idea of requiring every worker to produce standard, that is, for eight hours' pay he should perform eight hours work. If he is able to reduce the margin which is allowed as tolerances and produce in excess of the standard he should be rewarded in direct proportion to the value in time of the work in excess of standard. This provides not only reward but incentive. Each employee knows that by producing in excess of standard he receives full value for his effort.

We may say in conclusion that the problem is one of efficiency in management. If management fails to require efficiency there may be a change not only in management but in the economic system. The present economic system must be justified and only good management can justify it.

PROBLEMS FOR THE BUSINESS EXECUTIVE

ADVERTISING PROBLEMS IN SEEKING DISTRIBUTION

By Gayle Aiken, Jr.*

I. A Problem of Limited Local Representation

A well-known corset manufacturer desires to increase his distribution, that is, the number of dealers handling his goods.

The factors confronting him may be summarized as follows:

A. Product—a staple of practically universal consumption.

B. Present distribution—9000 dealers already handling his line. They are almost entirely country and small town dealers, and partially concentrated in the Middle West. The trade of the larger cities and of the rest of the country is to be sought.

C. His product is sold under his own trade-mark.

D. It is a condition of the trade that corset dealers prefer exclusive representation. Competing dealers in close proximity are averse to handling corsets under the same name. There are many reasons for this, all more or less obvious, but this well-established condition of the trade may be set down as a fact to be duly reckoned with. This means that only one or two dealers are possible in an average town, without having to overcome an extraordinary sales resistance.

Solution

There are three methods apparent by which the solution of this problem could be attempted and the desired end attained.

1. Straight selling. That is, complete reliance to be placed on the efforts of the sales force.

By this method each salesman would be expected to secure one or more dealers in each town in his territory, relying entirely on the quality of his goods and the price, to stock the dealers. By this method the ultimate movement of the goods from the dealer to consumer would depend on the dealer's selling effort, his advertising of the line to his trade, and his selling effort in his store.

As the line is marketed under the manufacturer's trade-mark, the inducement to the dealer to push it aggressively can never be great by this method. He realizes that if he establishes the line successfully in his territory, he must always face the possibility that the manufacturer may switch the line to a competitor. The success of the line in this case depends solely on his efforts and yet a competitor may be the one to get the ultimate profit from it. So however attractive the profit offered on the line may be, the dealer's effort to establish it must always be half-hearted under these conditions. Thus, the largest possible volume of sales can never be attained by this method.

The alternative under this method is to sell the dealer the goods to be resold under his own private brand. This, of course, puts the dealer in control and the manufacturer is liable to lose the outlet at any time since the dealer can give his private name to goods secured from any source.

To hold such private brand trade the constant temptation and tendency is always to cut the price and thus either reduce the margin of profit or the quality of the goods.

Under these obvious disadvantages inherent in this first method, the corset manufacturer whose problem is under consideration determines to sell his goods solely under his own trade-mark and to build up a demand for the goods by that name. Such demand will be permanent and the gross sales possibilities are greater since they will be directly proportionate to his efforts and not to those of partially interested dealers. Since the inducement to the dealer to push the line aggressively under the manufacturer's trade-mark is not great, as has been pointed out, the manufacturer must develop other sales-creating forces.

* With Lord and Thomas, Advertising Agents, Chicago, Ill.

2. Straight selling with the support of advertising.

Under this method the salesmen will rely as before on the quality of their goods and their prices, and in addition on the consumer demand and sales which the advertising of their line will create. In the case under consideration the goods are priced to fully meet competitive prices of either advertised or unadvertised lines of similar quality. The salesmen, therefore, have all the same arguments to offer under method 2 as under method 1, with the cogent additional inducement of consumer demand.

The ultimate movement of their goods from dealer to consumer depends only partially on the dealer's selling efforts. Though their ultimate sale does depend in part upon the dealer's efforts and can be greatly increased or decreased thereby, still the consumer demand, which the advertising initiates, inspires in most cases additional selling effort on the part of the dealer. This is the natural result because dealers like to push active sellers and are less prone on the average to push slow-moving lines. The best sellers usually get the display and the active support of the merchant, not alone because this policy is the line of least resistance, but because it seems to afford a larger profit and usually does as a fact.

For his protection against the switch of a well-established line to a competitor, the dealer can usually rely upon the good faith and policy of the manufacturer. The latter is averse to change as the dealer knows, because changes are uncertain and costly and every dealer realizes that he has a better chance of holding a line he already possesses than a competitor has of getting it, so long as he handles it properly. This is always an additional inducement to push the line and an added protection to the manufacturer inherent in method 2.

3. Straight selling with the support of local advertising paid partly by the dealer and partly by the manufacturer.

This might be an effective method were it not already overdone. It offers little inducement and has little effect upon the dealer because he has learned that most corset manufacturers will do as much for him. It is, therefore, a weak argument in favor of one corset against another. It asks the dealer for an immediate outlay of money and leaves him feeling that the manufacturer is really doing less than himself and less than his proper share for the sale of his goods. On the other hand, the size of the investment known to be necessary for national advertising on any considerable scale is an impressive answer to this objection.

Another fundamental weakness to this plan, as a sole reliance, is that sales become spotty. They are out of the manufacturer's control because the advertising is out of his control. Some dealers may agree to a 50-50 advertising campaign and fail to carry it through. There is no systematic aggressive campaign. Less advertising is done and fewer sales are secured.

Obviously, the success of method 2 will be proportionate to the efficacy of the advertising, and the advertising plan is therefore a most important element in a successful solution of the problem of seeking a larger distribution.

What plan of advertising shall be followed?

The advertising problem presented falls naturally into three elements:

1. How to reach the greatest number of people at the least cost.

2. How to reach at the least cost the largest number among those who constitute the present and prospective market. That is, those buyers in the trading districts of present and of future dealers.

3. How to reach them most effectively, that is, what message will be most convincing and productive of results.

The figures show at once that the greatest number of people can be reached at the least cost through the medium of the national magazines,—publications of national circulation. The greatest number can be reached in any particular community or district through the medium of the local press. Which shall be used?

In the case in hand it is to be remembered that the manufacturer already has a distribution of 9000 dealers scattered over the country, but concentrated fairly thickly in the Middle West. This distribution is an admirable nucleus as a basis for a campaign in national publications, since the product

is sufficiently well distributed to prevent too large an element of waste through the consumer's inability to secure the goods.

To undertake advertising in local papers for all these dealers and for prospective dealers would necessitate an advertising appropriation in excess of the total present sales of the manufacturer. It is therefore obviously out of the question. To divide the country into districts and attempt to cover them by a campaign in the metropolitan newspapers of wide circulation would still be too costly, and the readers in any particularly small community almost as scattered as the readers of the national magazines.

A point of cardinal importance also is the fact that only one or two dealers to represent the line are desired in each community. If the product were one susceptible of universal distribution, as is the case in the next problem, where every dealer in each city is desired as a prospect, intensive local advertising might be more effective. But where such limited representation is the goal the leading people in each community, if they can be reached with sufficient effect, are usually sufficient to secure it, because of the weight their desires have with dealers and the value of their example.

The leading national publications, particularly those in the woman's field, invariably have in their constituencies the better class of buyers. They invariably include the leading and most influential citizens. In other words, it is the general experience that properly used and supported by proper sales effort, they can be made the means of securing one or two dealers in most communities where desired.

With these considerations in mind, the answer to element 1 of the advertising problem is apparent. It accords also with the answer to element 2, since with the use of national publications decided upon, the problem becomes merely a choice of those whose circulation coincides most closely with the present distribution of the product. It is therefore desirable that publications be chosen with the largest percentage of their circulation in the Middle West for this manufacturer and yet which are also strong in other sections.

This choice seems obvious, because first consideration is properly given to the development of the present market. The circulation outside the present market will provide for the prospective one.

This correlation of circulation with distribution obviously reaches at least cost the largest number of present and prospective buyers in the trade territories of present dealers.

Element 3 of the advertising problem stated above is so large a subject in itself that it is reserved for a later article. For present purposes the efficacy of the advertising message may be assumed for the time.

Conclusion

In the case under consideration, method 2—extensive selling effort with the support of extensive national advertising—would seem to be the correct approach to the successful solution to the problem.

II. A Product Capable of Universal Local Representation

A toilet manufacturer desires to increase the number of dealers handling his products.

The factors to be considered are:

A. Product—a staple of practically universal consumption.

B. Present distribution—scattered thinly over the whole country and concentrated in certain states.

C. The whole line of articles is sold under one name and trade-mark.

D. A number of new articles have been added to the line. They are to be launched in the market, no distribution having yet been secured for them.

E. Toilet goods dealers do not require exclusive representation. This is an established condition in the trade. Any dealer is willing to handle any line for which there is a demand. All the toilet goods dealers in each town are therefore prospects, since the line is priced for general consumption.

F. Competition is very keen, keener than in many lines of industry. This is not alone because of the number of competing manufacturers, but because druggists put up their own private brands.

Solution

1. Will straight selling—complete reliance on the efforts of the salesmen alone—solve the problem?

If a large volume of sales is desired quickly, small reliance can be placed on straight selling unsupported by advertising or some measures to create public demand. The market is too nearly glutted with toilet goods for any dealer to care about taking on another line, unless a demand is at least probable, if not assured. Therefore reliance cannot be placed on the efforts of the sales force alone in seeking a large volume of sales.

One or two dealers in a town would not be satisfactory, since the volume of sales through an average dealer is not large, and also because the whole number of dealers in each town is the possible market. As large a percentage as possible of this total number must be secured and as the most effective and almost the only successful sales inducement is consumer demand, it must be created. Obviously intensive work is essential to get all, or a great part of all, the dealers in any community.

2. Straight selling with the support of advertising.

In addition, toilet goods dealers do not often push aggressively any particular line. They handle a number of lines and simply supply the demand that comes. The manufacturer must create his own demand. The dealer welcomes this because he has no fear of the line being switched to a competitor, since the manufacturer desires all dealers to represent him.

It would seem obvious from these considerations that advertising is essential to the successful solution of this problem. House to house canvassing by agents in place of advertising is not considered, because it is too slow, limited, and not permanent. It cannot build the prestige on which permanent demand must rest.

3. Straight selling with the support of local advertising paid partly by the dealer and partly by the manufacturer.

The same objections apply in this case as in the case of the corset manufacturer with an additional difficulty.

The average toilet goods dealer does not advertise at all. The rank and file in this trade are small concerns to whom an advertising appropriation is unknown. They do business largely on location, serving limited territories, and any general advertising in their communities has too large an element of waste to be profitable to them.

But the fundamental objection to this method is that where a number of dealers in the same locality are advertising the same articles at the same prices, no one gains any distinct advantage by it. It would profit the manufacturer, but the dealers could not be expected to undertake it. In the solution of this problem, its value as an order-getting inducement is not to be considered.

What plan of advertising shall be followed?

If the national market is to be attacked at once, the advertising problem would present very similar elements to those of the corset manufacturer's advertising problem but in this case the manufacturer has not sufficient distribution to make advertising on a national scale profitable. Certainly not unless a selling organization, of a size proportionate to the number of toilet goods dealers in the United States, were created to correlate its efforts with the effect of the national advertising. Advertising can only be 100% effective in seeking distribution when the solicitation of orders follows it closely and continuously. To undertake a national advertising campaign of sufficient size and the creation of a sales organization of commensurate proportions to force a line of goods into the national market everywhere at once is too Herculean an undertaking to be justified by conservative judgment.

It would seem more conservative, more feasible and less expensive, to take the market unit by unit and seek the largest possible consumption in each selected territory in turn. In other words, intensive instead of extensive work would seem the proper method.

Particularly is intensive work desired when every dealer in each town is a prospect and it is desired to stock them all, or as many as possible. This can only be accomplished by the creation of a strong local demand in each territory, and the systematic solicitation of every dealer in the territory.

Where only one or two dealers are desired in each locality, as in the case of the corset

manufacturer, one salesman can cover a wide territory in seeking new distribution. His work is extensive and in accord with the extensive plan of advertising.

But when, as in this case, the successful solution of the problem of seeking new distribution requires that many dealers be secured to handle the line in each territory, both intensive sales work and intensive advertising are desirable. The unit by unit plan allows trained crews of salesmen to work each territory intensively with the support of intensive localized advertising as they move from territory to territory. This cardinal difference in method follows from the nature of the two problems.

The problem in this case, therefore, is not how to reach the greatest number of people generally with the advertising, but how to reach the greatest number in each selected territory.

The problem of reaching them most effectively is common to both corset and toilet goods manufacturers.

It is obvious that to reach the greatest number of people in any selected city or district with an advertising message, the local newspapers must be used. By this method of local advertising, supported by a crew of salesmen, the maximum selling force will be brought to bear in each community. The crew of salesmen calls upon every dealer in the territory and the intensive local advertising reaches the greatest number of people in that territory. The salesmen's work, though based on the advertising, precedes it so that when the public demand arises as a result of the publicity, consumers find the articles ready for them on the dealers' shelves.

The conservatism of this method is apparent. The expense in any one territory is never great, and as territory after territory is added, expense can always be made to bear a reasonably proportionate relation to sales.

Conclusion

Intensive local advertising supported by intensive local selling effort to the trade is therefore the solution of the problem of seeking a wider distribution when the article is comparatively new, a national distribution yet to be won, and where universal representation among all the dealers in each territory is possible and desirable.

ACCOUNTING FOR EFFECTIVE INTEREST ON BONDS SOLD

By G. W. Greenwood *

In an article in *Administration* for September[1] the writer gave .07827245 as the effective rate of interest on bonds sold below par, but without any explanation as to how this rate was obtained. Where all bonds are redeemed at par, and the same number of bonds are redeemed at each interest period, it is easy to find the effective interest rate by algebraic methods, and also from tables which are available.

But when bonds are retired at some interest periods and not at others, or where some are redeemed at par and others at a rate other than par, the algebraic methods become somewhat complicated and there is little left except the method of false assumption—the method really used in finding roots of numbers, or even in ordinary long division.

Taking the problem in the September issue above referred to, let us assume a semiannual interest rate of .04 and work the problem as in partial payments according to the United States rule, as follows:

Principal	$900,000.00
Interest for six months	36,000.00
First payment	75,000.00
Present worth at the end of six months	861,000.00
Present worth at the end of five years and six months	65,351.58
Interest for six months	2,614.06
Twentieth and final payment	53,750.00
Remainder	14,215.64

* Treasurer of the United Refractories Company, Dunbar, Pa.

[1] Pages 393–394.

This shows that our assumed interest rate is too high, otherwise there would have been no remainder. Let us assume .0395 and make the calculations all over again. Our remainder this time is $5943.88. We might get a new approximation graphically, or by proportion, or perhaps simply thus:

Corresponding to a drop of $8271.76 in the remainder, there is a drop of .0005 in the semiannual interest rate, or .0000604 per $1000. To reduce this remainder from $5943.88 to zero, there would be required a reduction of approximately .00036 in the interest rate. Let us assume a rate of .03914 and make another calculation. This time we get as a remainder $56.65 which is close enough for all practical purposes.

By carrying the process still further, the result of .039136225 was obtained, which results in a difference of minus three cents.

In a problem of this character, one should set down the results in parallel columns, using a pad of columnar paper, with a vacant column between. In this vacant column, set down the differences between the corresponding present worths as the work progresses. These differences will increase gradually, a few cents at a time. If there is a sudden jump in the column of differences, then one may be sure there has been a slip in the intervening calculation. It is thus caught at once and can be corrected before any damage is done to the remaining computation.

A C.P.A. PROBLEM AND ITS SOLUTION

By Paul-Joseph Esquerré*

Editor of Administration:

Through the columns of your magazine or by letter, subject to your convenience, I should like to have your answer to the following:

In a volume of C.P.A. Problems and Solutions, I ran across some questions set for the New York C.P.A. examination in practical accounting for 1914. One follows:

Question V

X and Y purchase an invoice of coffee for $12,000. X contributes $7500 and Y, $4500. They sell Z a one-third interest in the venture for $6000. How much of the $6000 should X and Y receive, respectively, in order to make X, Y, and Z equally interested?

Two solutions are offered by the editor of the publication. Both provide for X being charged $3500 for capital sold to Z, and Y, $500; all of which is perfectly clear. But the point I stumble over is the editor's statement as to the division of the $2000 bonus paid by Z. The editor states that in accordance with the law of joint ventures, the parties should share equally in the profits, hence 50% or $1000, should go to X and the same to Y. Or the alternative would be, X should receive 62 1/2% of the $2000 = $1250 and Y, should receive 37 1/2% = $750.

Now it seems to me, accepting the problem on its face, the following is the correct solution:

Original Capital Contribution		Capital Interest Retained		Share of Capital Contribution by X & Y to Z
X—$7500 (15/24)	less	$4000 (8/24)	=	$3500 (7/24)
Y— 4500 (9/24)	"	4000 (8/24)	=	500 (1/24)
$12,000 (24/24)	less	$8000 (16/24)	=	$4000 (8/24)

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Hence, since X contributed 7/24 (of the $12,000 original capital) or *seven* parts of the one-third share sold to Z, and Y, 1/24, or *one* part, it would seem therefore, that the $6000 paid by Z should be apportioned upon the same basis, i.e.:

X—7	parts	=	$5250
Y—1	part	=	750
			$6000

In other words, the $2000 bonus should be divided, $1750 to X, and $250 to Y.

This suggests the old C. A. problem abroad.

Two boys buy fruit for 5d. A contributes 3d. and B 2d. C comes along and buys a one-third interest in the fruit for 5 pence. How should his payment be divided by A and B?

A—3d.	=	9/15	less 5/15	=	4/15	contributed
B—2d.	=	6/15	less 5/15	=	1/15	"

Therefore, A receives four parts or 4d. and B, one part or 1d.

Yours faithfully,

(Signed) A. E. A. de Veitelle

II

Dear Mr. Lee:

You have been kind enough to refer to me a letter written by Mr. A. E. A. de Veitelle, 590 West 172 Street, New York City, in reference to Problem No. 5 of the C.P.A. examination of 1914, in practical accounting, the solution of which was prepared by me and published by the Ronald Press Company in a volume known as "C.P.A. Problems and Solutions 1914,", Volume II.

I presented two solutions, one based on law and the other on what might be called equity. The legal solution was based on the law of partnership, since joint ventures are subject to the same law: the equity solution was based on what appeared to be logic. The agreement between the partners was not stated, but it seemed at the time, as if even partners in a joint venture would have some common sense, and would understand perfectly the value of their respective positions.

In order to make matters clearer, I will re-state the problem in the following:

X and Y purchase an invoice of coffee for $12,000. X contributes $7500 and Y, $4500. They sell Z a one-third interest in the venture for $6000. How much of the $6000 should X and Y receive, respectively, in order to make X, Y, and Z equally interested?

The two solutions presented by me were as follows:

The solution of this problem depends upon a point of the law regulating joint ventures, or upon a question of equity if the state of joint venture is diregarded.

In joint ventures, as well as in copartnerships, if the ratio of profit division is not mentioned, all partners share alike. In the case in point, X and Y recover part of their capital invested, and sell an equal share of the future profits to which they would have been entitled.

If it can be considered that the state of joint venture exists only in fiction, and that equity must overrule law, X and Y recover part of their capital invested, and sell a share of their future profits proportionate to the amount to which they would have been entitled according to the ratio of their individual capital to the total investment.

Solution 1

X—Capital originally invested, entitling adventurer to 50% of profits, in accordance with the law of joint ventures	$7500.00
Less capital sold to Z	3500.00
Remainder of capital invested	$4000.00
Share of bonus of $2000 paid by Z for equal share in profits, 50%	$1000.00

Y—Capital originally invested, entitling adventurer to 50% of profits, in accordance with the law of joint ventures	$4500.00
Less capital sold to Z	500.00
Remainder of capital invested	$4000.00
Share of bonus of $2000 paid by Z for equal share of profits, 50%	$1000.00
Z— Amount paid for share of profits in joint venture	$6000.00
Less amount paid as bonus to X and Y	2000.00
Balance, i.e., capital invested	$4000.00

Solution 2

X—Capital invested	$7500.00
Less capital sold to Z	3500.00
Remainder of invested capital	$4000.00
Share of bonus paid by Z, to be considered as a strictly private transaction: 62.50% of $2000	$1250.00
Y—Capital invested	$4500.00
Less capital sold to Z	500.00
Remainder of invested capital	$4000.00
Share of bonus paid by Z, to be considered as a strictly private transaction: 37.50% of $2000	$750.00
Z— Paid for share of profits	$6000.00
Less paid to X and Y in the form of bonus	2000.00
Balance, i.e., capital invested	$4000.00

As opposed to these two solutions, Mr. de Veitelle offers the following:

Original Capital Contribution		Capital Interest Retained		Share of Capital Contribution by X & Y to Z
X—$7500 (15/24)	less	$4000 (8/24)	=	$3500 (7/24)
Y— 4500 (9/24)	"	4000 (8/24)	=	500 (1/24)
$12,000 (24/24)	less	$8000 (16/24)	=	$4000 (8/24)

Hence, since X contributed 7/24 (of the $12,000 original capital) or seven parts of the one-third share sold to Z, and Y, 1/24 or one part, it would seem, therefore, that the $6000 paid by Z should be apportioned upon the same basis, i.e.:

X—7 parts =	$5250
Y—1 part =	750
	$6000

In other words, the $2000 bonus should be divided, $1750 to X, and $250 to Y.

This suggests the old C. A. problem abroad. Two boys buy fruit for 5d. A contributes 3d. and

B 2d. C comes along and buys a one-third interest in the fruit for 5 pence. How should his payment be divided by A and B?

A—3d. =9/15 less 5/15 = 4/15 contributed
B—2d. =6/15 less 5/15 = 1/15 "

Therefore, A receives four parts or 4d. and B, one part or 1d.

You wish to know what I have to say of the foregoing. All I would like to say is that I cordially thank Mr. de Veitelle for permitting me to make myself seven years younger, even if that rejuvenation is only in the retrospect. But this would hardly satisfy him. Therefore, I will have to state my position.

In what we might call the equity solution, I took the stand that what X and Y were selling, was really their proportionate share of the bonus, as measured by their capital, since, thereafter the interests of X, Y, and Z were to be equal. As to the adjustment of capital, it involved no sale of capital, but merely a refund by Z of such a proportionate amount (invested by X and Y) as would make the shares of the three partners absolutely even.

In what I have called the legal solution, I have taken the stand that, since X and Y (original partners who were to divide profits evenly) were willing to share the profits with a third party, with the proviso that the amount of invested capital would not change, all that was necessary was to repay to X and Y the capital contributed by them in excess of the limit now allowed, and divide the bonus evenly. Of course, Y receives more than X, proportionately to the capital invested, but such is the law in cases of copartnership agreements where no mention is made of the division of profits.

I have no fault to find with Mr. de Veitelle's solution, except that it ignores entirely the legal aspect of the proposition, and assumes that the equity end of it is the only thing at issue.

As to the equity solution presented by your correspondent, it differs from mine in that it divides the bonus on the basis of the capital after the sale of part thereof, while I consider that the so-called sale of capital is, in reality, no sale at all, but merely a refund.

Who is right? May I suggest that Solomon died centuries ago, and with him his wisdom?

Sincerely yours,
(Signed) Paul-Joseph Esquerré

A PROBLEM IN ORGANIZATION

In opening a set of books for a newly organized corporation, the following problem was met:

A company was formed which we will call the New Process Company. It was incorporated and capitalized at $100,000 under the laws of Delaware. Par value of the stock was $50 per share. There were obtained subscriptions at par in the amount of $5000. There was to be a secret formula sold to the corporation for $25,000 to be paid for in stock.

The original subscribers to stock were to receive four shares of stock for each share purchased. In other words, the subscribers to the original $5000 worth of stock would receive among them $20,000 additional, making $25,000 worth of stock which they would hold. The way in which the free stock would be transferred to the stockholders was to be through the person who was selling the process to the company. That is, he was to receive $70,000 worth of stock for his process from which he would donate $25,000 worth to the corporation to be held as Treasury Stock; $20,000 worth to the stockholders as a bonus; and the remaining $25,000 to be kept by him in exchange for the formula.

The stock was changed to a no par value stock, inasmuch as the above-mentioned method of handling would have involved an enormous income tax on the part of the holder of the process.

Question 1. As the holder of the process is now to receive a stock of no par value in exchange for his process, must there not be some value to the stock given him?

Question 2. Would he not have to pay income tax on the value of the stocks as stated?

Question 3. Would not the corporation have to set up as an asset the value of the formula as obtained?

Question 4. How would the unissued stock of no par value be accounted for on the books of the corporation?

Answer 1. Some value must be placed on the stock given to the holder of the process on the books of the company. Under the laws of New York, the value attached to the stock must not be less than $5 a share, and when given in exchange for property, or as in this case, for a process, the fair value of the process should at least be equivalent to the stated value of the stock as it appears on the books of the company.

Answer 2. Under the income tax law, the persons receiving the stock in exchange for property would have to pay tax on the excess of the fair market value of the stock over the cost of the property. If it can be shown that the cost of the property equaled or exceeded the fair market value of the stock received in exchange for it, there would, of course, be no income, and therefore no tax. For a full discussion, reference might be made to "Income Tax Procedure, 1921" by Robert H. Montgomery.

Answer 3. The corporation would have to set up as an asset the value of the formula obtained as an off-set to the stock issued in exchange for it. The procedure of showing the issue of no par value stock on the books of the corporation is exactly the same as that used in the case of stock with par value with the exception that the stipulated par value has to be used on the books in one case, whereas in the other the stated value as determined by the actual amount received in payment for it is used.

Answer 4. The unissued stock of no par value would be shown on the books of the corporation as follows:

Capital Stock:
Authorized 1000 shares of no par value
Issued and outstanding 500 shares . $3,000 .00

REVIEWS OF BUSINESS BOOKS

AMERICAN AND FOREIGN STOCK EXCHANGE PRACTICE, STOCK AND BOND TRADING, AND THE BUSINESS LAWS OF ALL NATIONS

By W. J. Greenwood, C.P.A. xxi, 1048 pp. Financial Books Company

REVIEWED BY ROBERT L. SMITLEY *

The subject of organized markets is more than ever bound up with that of corporation and company laws. Few economists during the last decade have appreciated the tremendous importance of these two factors of the financial organization, although numerous universities and schools have appreciated the necessity for training in both.

During the evolution of the organized market in this country, practically no attention has been paid to the machinery used in other countries. In fact the exceptional ignorance of those who operate our machinery of organized markets, especially of the stock exchanges, is too well known to exact further comment.

Economic laws and rules may not change fundamentally but each year calls for a change in the application of them. Thus it is that the factors which brought about the rule of the Federal Reserve System in preventing re-discounting of collateral loans, the general attitude of the banks in becoming more commercial and less speculative, and the development of new clearing methods by the New York Stock Exchange, have been potent in forcing changes in our organized market machinery. These changes are in transition and it is interesting that the changes suggested are for the most part based on methods which are used in other countries.

Of course the situation in corporate obligations in this country is also undergoing various evolutionary stages but in other countries the changes are more apparent and more radical. There is a similarity in the situation regarding our knowledge of foreign corporate and company affairs to that of the ignorance of the organized market machinery. But this must be changed because of the fact that this country is entering into an international phase of economic life, especially pertaining to finance. It is therefore necessary for our bankers, investment dealers, business men and even practical economists to know something about foreign law and custom.

It was apparently with this viewpoint in mind that W. J. Greenwood made the attempt to collate as much as possible of this material under one heading and enclosed in one binding. The author is a member of the American Institute of Accountants in the United States, a Certified Accountant in London and Expert-Comptable Patente at Paris. He formerly lectured at the University of London and his especial ability lies in the field of collation of essential data. Therefore he was fitted for the purpose of presenting this data in logical and understandable form.

There are 1048 pages in the book including a general index, an index in French, one in German, another in Spanish, and a Geographical Index. Most of the book deals with the essential forms of organized market and the individualistic types of corporate and company laws. The countries which satisfactorily represent the types are the United States, Great Britain, France, Belgium, Germany, and Switzerland. From these types are taken the more generalizing descriptions of other bourses and company laws for other foreign nations, including those of South American countries, Greece, Monaco, Serbia, Czecho-Slavakia, Japan, and the Scandanavian countries. In all there are outlined the essential factors of the subject covering 56 nations. Australia,

* Special Writer on Financial Topics.

New Zealand, Papua, Canada, and The Union of South Africa are rightly placed under the subject head of the British Empire.

The summary of business laws, of tax laws, of stock exchange or bourse ruling and procedure, of partnership laws, of the establishment of foreign companies, bills of exchange, fees, etc., is made in the most condensed form possible which can be consistent with clarity and understanding for the layman. The author has made no pretense toward literary effort, in fact the whole book is at fault because of the absence of any literary qualities. Sometimes the author injects a little personality into what he has to write, usually through the process of definition and sometimes this personal element befogs the definition itself; but this criticism is not a serious one. The book is essentially one for reference. The collation of this material was carefully done, according to the story of the author and according to the evidence of the book itself.

Hearsay evidence regarding a law or usage was eliminated so far as was possible and the compilation was made from original documents of the latest possible date which were received from official sources. Even with this care it is inevitable that a few errors should creep into the text but, so far as has been observed from those who have used the book in a practical manner, such errors are not vital ones and are mostly due to misinterpretations of the idiomatic phrases of some of the foreign exchanges.

It is by no means a book which will be considered a popular one. It is certainly not a book for the average man to spend an evening over in the sanctity of his private library. It might be an excellent cure for insomnia and an antidote for a Socratic wife. On the other hand, the information which it contains might prove to be worth thousands of dollars to the firm dealing in securities in an international way and it should certainly be in every business library as a book of reference.

Importance of a knowledge of foreign laws is pointed out as follows:

> Foreign commercial laws differ very widely from American laws, and even a brief study of the foreign regulations may save American firms from costly errors of judgment.
>
> It must be remembered that, as regards business done in foreign countries, any legal action taken abroad will be decided by the foreign laws and not by the rules of American law. An American firm pleading in a foreign court will be presumed to have a knowledge of the foreign laws and any defence alleging ignorance of them would be disregarded. Foreign judgments can be enforced on the property situated abroad, and on debts receivable there, and it is not always possible to have the cases re-opened.

That the book is up to date is further evidenced by the paragraph on "Money Loans and The New Clearing System" (New York Stock Exchange). It is thus that the author describes this very complicated situation:

> The large banking and financial houses, which lend money at call and on time to stockbrokers, are working in conjunction with the Stock Clearing Corporation, under the new system.
>
> A broker deposits his collateral with the Clearing House which holds it on behalf of the banker who lends the funds. If the loan is for the day, and is renewed on the following day, there is no movement of the securities, the renewal being effected by the recording of the transaction in the books of the Stock Clearing Corporation. Even if the original loan is paid off, and the money borrowed from another banker, a bookkeeping entry is all that is necessary.
>
> It is intended to make use of the new Clearing House as a transfer registry. At present, registered stocks deposited as collateral with bankers have to be recovered by the broker and delivered to the transfer offices of the corporations, in order to have the transfers made to the name of the broker before a dividend payment. Otherwise, the dividend would be paid to the former registered holder. The replacement of this collateral by other securities, during the time of deposit of the stocks with the corporations for transfers, locks up considerable amounts of the broker's capital. By the method at present proposed, the broker would be able to obtain a loan from the Clearing House against the delivery of the receipt given by the transfer agents for the stocks left at the transfer offices for registration.

In the sections treating of the laws of each separate state, considerable space has been given to their registration regulations, which require foreign corporations (formed in other states or abroad) to register and to obtain a trading license before commencing business. Particulars are given of the whole procedure of registration required by each

state, together with the registration fees and annual fees and taxes payable. The cost of incorporation of domestic companies under the laws of each state is also shown in detail.

The reviewer has been compelled to confine his observations, so far as the use of form is concerned, to the small amount of descriptive matter. Financial and economic writers are agreed that this type of explanation is the most difficult known. While the author certainly will never appear in the Hall of Fame for literary ability, he has, however, accomplished a work which must have been tremendous in effort and the results will be praised by everyone who finds it necessary to know some of this information in a hurry.

EMPLOYMENT METHODS

By Nathan W. Shefferman, Consultant in Personnel and Employment Management. xx, 573 pp. The Ronald Press Company

Reviewed By Frank Harder Ryder*

From a criticized and sometimes ridiculed procedure, employment management and employment methods have become a recognized and respected science. This change in attitude is due in large part to the recent war when scientific employment methods became a necessity in fitting men for jobs.

What Mr. Shefferman has done is to compile a comprehensive book. His data, collected for many years, are offered in a readable and digestable form.

But Mr. Shefferman is not merely the compiler; his data and his conclusions are based upon the results of careful investigation and experience. The slipshod method of hiring and firing men in the past and the result of this practice is especially emphasized in this book.

The author summarizes, as follows, some hiring errors:

1. Careless hiring. The theory that one man is as good as another.

2. Favoritism on the part of a foreman. The foreman stands among his comrades as a person of importance because he can give a man a job. He is likely to allow this standing to become more important than his loyalty to the firm.

3. Preference. Preference may be given on grounds of church membership, creed, or nationality, regardless of fitness or capacity for the job; or to members of the same secret society. Such organizations are sometimes brought into disrepute by being utilized for a purpose for which they were never intended.

4. Bad-tempered hiring. The individual doing the hiring often speaks gruffly or makes the applicant wait an hour or two before the interview. The bad impression thus created at the beginning reflects discredit on the plant.

5. The personal factor interferes. The one who hires rarely gives an encouraging interview to men who do not appeal to him personally.

6. Envy between foremen. Frequently one foreman may be envious of another foreman. Instead of referring to the other a promising applicant whom he cannot use, he will prefer to let the firm lose a good workman; he does not realize that he has any need to be concerned about the wants of another department.

7. Thoughtless firing. A man is liable to be fired as quickly as he was hired and with the same gracelessness, indifference, or prejudice. Calm reason, not prejudice and spite, must characterize the personal relations between the firm and the employee.

The function of an employment department Mr. Shefferman divides into eighteen parts. They are listed below;

1. Getting help
2. Job analysis
3. Identification systems
4. Industrial training—education, etc.
5. Housing
6. Placing men in proper places
7. Promotions
8. Discharges

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9. Tardiness
10. Transfers
11. Arbitrating employees' grievances
12. Labor turnover
13. Wages, hours, etc.
14. Absentees
15. Safety
16. Welfare work—recreation, etc.
17. Plant publications
18. Mechanical systems for the employment office, so that its functions may be properly administered.

Following this list the author has given charts portraying the functions, and another showing the additional functions, of the employment manager. These charts are excellently developed and are especially praiseworthy. It might be fitting to add at this point that throughout his book the author has inserted copious charts and illustrative material, all of them commendable.

The first steps in organizing an employment department in an establishment that has had no employment system are, says the author, as follows:

1. To secure the co-operation and constructive help of the executives, the foremen, and the workmen.
2. To determine the most effective staff for his office, and to choose the men to form that staff.
3. To lay out a plan for his offices which will meet the varied needs of his department and allow for future change and expansion.

Of course it is the employment manager's job to impress the various heads of the firm of the utility of his work. The author especially emphasizes the saving in labor turnover from the development of an employment department. In places he overemphasizes this factor of labor turnover, giving the impression that the only purpose of an employment department is the saving of money in labor turnover.

In some of the forms which Mr. Shefferman recommends there is a bit too much detailed information. On the whole the executive will find such forms of practical value for adoption, with necessary modifications, in his own industrial plant.

In the chapter on "Job Analysis" the author again presents invaluable charts and blanks. Under the heading "Securing the Worker" are given the various media of reaching the man without a job. These media are divided into classes as follows:

1. Advertising; newspapers, circulars, poster.
2. Soliciting; inside assistance—recommendations by foremen and workmen; boarding-houses; previously employed employees.
3. Scouting; new nationalities, rural districts.
4. Employment agencies; private, municipal—co-operative, federal.

Chapter X takes care of hiring, selection, and assigning, although there is not enough attention, in the opinion of the reviewer, given to the personal interview in hiring. Mr. Shefferman obviously prefers the question method in interviewing rather than informal conversation.

The principal function of the employment manager, says the author, is to select the right man for the right job, and the success with which he performs that function is almost the measure of his success in general. Mr. Shefferman outlines a comprehensive list of psychological tests for different vocations; typists, stenographers, business correspondents, routing clerks, telephone operators, statistical clerks, handsewers, machine stitchers, label-pasters, efficiency engineers, salesmen, etc.

In detail Mr. Shefferman treats the subject of holding employees. He particularly emphasizes the education and training of apprentices, the Americanization of foreign employees, and the teaching of English to non-English-speaking employees.

Wages alone do not constitute the *summum bonum* of a worker's happiness and well-being. Good working conditions, congeniality of fellow-workers, and personality of foreman, bulk large in the reckoning. It is undeniable, however, that the greatest incentive to enthusiastic work is the almighty dollar. The payment of an adequate wage is the panacea for nearly all employment disturbances; it is the basic remedy for labor turnover.

The adjusting of wages and wage inequalities are a vital part of the duties of the employment department. Another function is the transferring of men from one department to another. This includes promotions.

On the question of punctuality the author points out the following:

The members of the employment office staff, together with the foremen, are responsible for reducing tardiness and absence to the minimum. The most opportune time to call an employee's attention to his responsibility toward the firm in the matter of prompt and regular attendance, is immediately after he is hired. He should be made to understand the mutual obligations of worker and management; he should be shown that promptness, regularity, and steady attendance are helpful to himself as well as to the company; that absence from work causes loss not only to him, but to others whose work may be dependent upon him.

The employment manager can show the employee that the company loses by his tardiness in the following ways:

1. All equipment means nothing if the employees are not on hand to operate it, to perform the volume of work that has caused the company to provide buildings and allot space for each activity.
2. Whether the employee is present or not, the same amount of "overhead" expense is required —more, in fact, because the accounting department must keep track of such irregularities as absences.
3. The influence upon other employees occasioned by the habitually tardy person or the one who stays home without good reason is bad.
4. The work is planned on the assumption that the people employed will be on the job, and if they fail to report someone is bound to be inconvenienced, if indeed the schedule of the department is not seriously interrupted.

The difficult task of discharging a man is handled in an admirable way and is well worth the perusal of the executive in general and of the employment manager in particular. The employment manager, having the employee's complete record before him, is best equipped to exercise the function of discharge. But the "right to fire" is not half so important as the "right to inspire."

Mr. Shefferman lists the five functions of the employment manager in exercising the discharge of employees as follows:

1. To make an impartial judgment of each case.
2. To stabilize the judgment of the foremen.
3. To establish good-will for the plant.
4. To collect necessary data concerning reasons for discharge.
5. To collect necessary data concerning reasons for leaving.

Under the head, "Employing for the Business House," Mr. Shefferman uses practical illustrations from the National City Bank, The Metropolitan Life Insurance Company and other large organizations. In this section of the book the engagement of office people is considered in detail just as in preceding sections the hiring of factory or plant men is treated. The various problems of office employees are not neglected.

Mr. Shefferman does not forget the human factor in it all or the "service work in industry." He never slights the fact that the worker must be kept contented, healthy, safe, etc. He briefly covers the ground of social work among employees; profit-sharing schemes, bonus plans, pensions, insurance, stock-owning, saving schemes, etc.

An interesting chapter in the book is that headed: "The Place of Women in Personnel Work." The relation to men of women in industry and the desirability of women on the staff of the employment department is a unique touch to the book.

"The Employees' Handbook" constitutes Appendix A. Here is given a resumé of all the information a worker is to have. Appendix B covers industrial training; its needs and benefits. Appendix C treats the subject of instruction to insure Americanization of Aliens and is written by A. H. Wyman of the Carnegie Steel Company.

Dr. R. S. Quinby, of the Hood Rubber Company, writes on "The Co-operative Store" in Appendix D. Appendix E treats the visiting nurse; Appendix F is a suggestion system of the National Cash Register Company, and Appendix G is the Annuity and Benefit Plan of the Standard Oil Company of New Jersey.

Appendix H describes the educational department of the National City Bank; and Appendix I covers the training at the R. H. Macy Department Store.

Appendix J includes excerpts from welfare pamphlets issued to employees of the Metropolitan Life Insurance Company concerning education, health, and its various factors.

A chapter which seems to promise the most is in some respects—and these the most essential—disappointing. Reference,

of course, is to that chapter which takes up industrial democracy. In its subject matter it is somewhat scrappy and in its mode of treatment it leaves much to be desired. What is said might easily have been compressed into a much smaller compass.

The best part of this chapter is the quoted matter. By way of illustration the outline of the practical field by the Standard Oil Company on the "Right of Appeal" may be quoted:

Any employee who feels that he has been unjustly treated or subjected to any unfair conditions, has the right of appeal to the general superintendent and the higher officials of the company, provided he shall first seek to have the matter adjusted by conference, in person or through his regularly elected representative, with the foreman or the employment department.

Before such appeal shall be taken to any official not located at the plant, it shall first be considered in a joint conference composed of the employees' representatives in the division affected and an equal number of representatives of the company. In case such conference fails to agree unanimously as to a fair adjustment, an appeal may be made to the executive council at the works, or in case such a council has not been organized, to a conference composed of all of the employees' representatives at the works together with an equal number of company representatives.

Future wage adjustment shall be made in joint conferences between the employees' representatives in the division affected and representatives of the company, such adjustments to be subject to the approval of the board of directors.

Joint conferences of employees' representatives and company representatives shall be held at each of the works at least quarterly, to discuss any matters of mutual interest. A general conference of all employees' representatives from the various works and of company representatives shall be held annually at the call of the president. At all joint conferences the number of company representatives shall not exceed the number of employees' representatives.

In the verbatim report of a president's plan of industrial democracy the executive may find many helpful suggestions, because some of the mistakes to be avoided are pointed out, as the following extract will show:

We organized a congress of twenty-four members none of whom should be in the managerial grade. No persons were eligible to election unless they were of age, were citizens of the United States, and had been employed by the company for at least one year. The members were all "at large," that is, they did not represent departments—I was afraid of departmental cliques.

This is the manner of election: On an official ballot each employee checks the names of twelve individuals. The twelve persons receiving the highest number of votes are elected. The three out of the twelve who received the highest number form a committee to confer with me on the appointment of the other twelve members. I made this provision to provide against the control of the assembly by those who had the desire to destroy rather than to construct.

In that I made a mistake. The men elected were of the highest type—so high, in fact, that our committee of appointment had trouble in getting twelve others to size up with them. Although I was one of the members of the committee of appointment, I left the detail entirely to the workmen members; I merely participated as a rubber stamp. In the future all of the members will be elected. It is provided that members shall hold office through one year. Thus a continuity of policy may be preserved which would be impossible were the entire body made over each twelfth month. This, of course, required an adjustment of the terms of the first election.

The congress appoints standing committees on employment and discharge; education and publication; wages and rates; finance; health, sanitation, and safety; economy suggestions and improvements; rules, procedure and elections; production and control; shop training; sales cooperation; time and motion study; spoiled work, improvements, and machinery; recreation; attendance; and the miscellaneous committee for matters not otherwise disposed of.

There is also elected (and this has proved to be a very valuable feature) a representative in each department, who is charged with the duty of gathering material for the congress and to interpret its rules. The representatives sit with the congress and may be called upon for advice, but they do not have a vote nor can they engage in any debate excepting by special invitation.

The faults of "Employment Methods" are practically the same as those of this review, so that possibly those who live in glass houses ought not to throw stones—as the green-covered copy-book of our school days used to say. The book, like this review, is too much of a mechanical summary

and lacks interpretive critical comment. It pays too little attention to the philosophy behind the adoption of the forms and blanks which illustrate the text. These forms and blanks were clearly designed to solve certain problems in the handling of men or material. It would be helpful to have these problems clearly and succinctly stated for the reader.

This fault, it may be said, occurs in much of the business literature of the day. Most business books put too much emphasis on what was done and overlook the most important thing of all—why it was done. In many cases it is obvious that executives might not want to make their reason public, but in other cases such objections would not hold. An editorial blue pencil could have improved this book and thus avoided that scrappy style which comes from a failure to give coherence to the data collected. In many instances a heading has been placed over too small an item and gives such an item undue importance in relation to the other items of the same chapter. This abuse of paragraph heading gives the impression of padding the book to make it larger.

Mr. Shefferman doubtless compiled this book in odd moments when he was not busy with personnel duties, just as some of the book reviews for *Administration* are doubtless composed by business executives who dictate comments in odd moments in the office.

In conclusion Mr. Shefferman has put so much into his book of practical value to the executive, that the present reviewer does not want to be too critical about the form of presentation for fear such treatment would deter other executives from sharing their experiences with their fellows in the industrial field. As a general survey of the field the book shows that its author has collected his material from scattered sources. He does not neglect to point out the important fact that circumstances alter so many cases that questions relating to employment management require the most careful consideration of all factors.

RISK, UNCERTAINTY, AND PROFIT

By Frank H. Knight, Ph.D. Associate Professor of Economics, University of Iowa. xiv, 381 pp. Houghton Mifflin Company

Reviewed by Malcolm Keir *

The author of this book says that his purpose is the refinement of economic doctrine in respect to the rôle of the "enterpriser," the recognized central figure in our economic structure. Dr. Knight seeks the forces that fix the remuneration of this "enterpriser."

The book is, therefore, a study in pure theory, but has a practical application for the executive in that it may serve to guide opinion regarding projects of social betterment that involve substituting social or political control for private property and individual freedom of contract.

Professor Knight's theme is that "uncertainty" regarding the future is the foundation from which has arisen human intelligence. He believes that a society in which all uncertainty was removed would be peopled with automats whose reactions to their environment would be entirely mechanical and unguided by conscious mentality. The intelligence to deal with the future, and the courage to act upon the promptings of that intelligence are unequally distributed among men. Those who can and will deal with uncertainties become business enterprisers, directing the activities of those whose intelligence and courage hold them to guaranteed results. The enterpriser assures the future to his workers with a wage proportioned by the competition among enterprisers for workers and also by the needs or options of

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the workers themselves. The enterpriser gambles on his judgment of the future and allocates to himself the residual between costs and selling price if his forethought is accurate or his luck good; likewise he bears the loss if his judgment or luck is poor. It is the game between judgment and uncertainty, and particularly the reward for the successful playing of the game that stimulates the qualified men and gives rise to our economic order.

In this theory Professor Knight sharply distinguishes between "risk" and "uncertainty." Risk is a future contingency which is capable of measurement, and may be discounted by combination or specialization as well as by speculation or insurance. Risk, unlike uncertainty, is not of itself the breeder of profit.

Although human intelligence constantly endeavors to reduce uncertainty, it nevertheless delights in it, and according to the author, would not eliminate it altogether even if that were possible. Since uncertainty is sure to exist, and inasmuch as we have accommodated ourselves to it by the slow building of the existing order comprising private property and the allocation of profits to the enterpriser who best gauges the uncertainty, radical transformations of society should be approached with caution.

To arrive at these conclusions Professor Knight assumes first a theoretical society in which competition is perfect, and uncertainty entirely removed. He postulates change and progress in this society but regards them as knowable, measurable, and insurable. He shows that in such a society without uncertainty there would be no profit, for every article in the long run would sell for what it cost to produce. Having made this point, and backed it up with elaborate and intricate argument the author proceeds to assume a society in which there is some slight uncertainty, with a correspondingly slight profit. Finally he sets up a society like our own ruled by uncertainty. He carries his theme through these devious theoretical postulates, and supports it with minute, painstaking logic. This involves examination, refutation, or commendation of existing theories of risk, uncertainty, and profit.

Evidently at the beginning of his work, Professor Knight had in view two audiences, one the business men of the country, the other the professional economist. To the first he addresses a long, almort sophomoric defense of the theoretical approach to practical problems. But as he warms to his main theme the author forgets his business readers, and clearly confines himself by allusion, vocabulary, and method to the baker's dozen of leading theoretical economists of the country. Consequently, although most business men will welcome Dr. Knight's admirable defense of their place in the economic structure, and will concur in his denunciation of hasty sweeping social or economic reforms, it is doubtful if many of them will read his book.

THE LAW IN BUSINESS PROBLEMS

By Lincoln Frederick Schaub, Professor of Commercial Law in Harvard University; and Nathan Isaacs, Professor of Law in the University of Pittsburgh. 821 pp. The Macmillan Company

Reviewed by Thomas Conyngton*

The authors say in the preface:

This book aims, in common with the others, to give some understanding of the legal rules governing the more familiar business transactions and business relations, but its principal concern is to show the legal system in its relation to the problems and policies of business administration. It is not an "elementary" law book. Possibly it may be thought by some not to be a law book at all. It is intended for mature and intelligent readers and students whose chief interest lies

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in the field of business, whether or not they have any special knowledge of law.

The liberal use we have made of learned notes and articles taken from the technical law reviews may seem surprising in a book for laymen. It is our sincere hope that the passages will speak for themselves and demonstrate the possible value of a good law journal to the business man who wants to keep *au courant* in his own field. In the present state of our legal literature the journals are the repositories of our best thought in business law as well as other fields of jurisprudence.

For business law is the branch of law to which Cicero's famous words quoted by Lord Mansfield, in Luke v. Lyde, 2 Burr. 887, are peculiarly applicable: *Non erit lex alia Romae, alia Athenis, alia nunc, alia posthac, sed et apud omnes gentes et omne tempore una eademque lex obtinebit.* Let this be our excuse for occasionally dipping into foreign systems for comparison.

The authors give us a well worked-out account of the contrasted features of the common law and the civil law systems:

1. The decisive part taken by the jury in all common law procedure. In civil law countries, trial by jury is not an incident of any civil proceeding between individuals.

2. In common law countries all men are equal before the law. That is, there are no special courts or systems of procedure for clergy, government officials, or other privileged classes.

3. Under the common law a case once decided establishes the principle, and when a similar case arises, it must be decided in like manner. In the Roman law, such a doctrine of judicial precedent is unknown.

4. The fact that the common law has been evolved from decisions rather than from formally contrived codes. In other words, the common law is a judge made law, while the civil law is based on codes.

The growth and adoption in the common law of the *lex mercatoria* is set forth, and likewise the growth of equity as a separate system and its final incorporation into the English and the American systems of law. The advantages and disadvantages of our present system of law are fairly and intelligently presented. The authors are entirely aware of both the faults and the excellencies of our legal system. A fair and receptive mind to the possibilities of new social legislation is displayed, and the attitude of the courts, when called upon to pass on those modern statutes which are complete innovations on all previous judicial conceptions of the law, is well exemplified and explained.

The efforts that have been made and are being made to secure state uniformity in our practical business law are described, and their desirability strongly stated.

The bulk of the book treats of various phases of business practice. Part I gives the law relating to "Engaging in Business." Part II treats of the Law of Contracts and particularly of buying and selling. Part III of the Enforcement of Contracts, and especially with reference to the relation of debtor and creditor. Part IV relates to the law pertaining to Business Organization.

The authors believe that a knowledge of the law can best be gained by the study of actual cases. It has been generally accepted that the case method is best for those preparing for professional careers. It is open to question whether the ordinary business man can give the time needed or can as readily get the legal principle involved, from the opinion of a judge using the technical language of his profession and talking to lawyers, as he could from the statement of the same principle in business language. The authors have by no means confined themselves to the case method, and where they have set forth legal principles in their own language, it seems much easier of comprehension than where it is set out in a formal judicial opinion.

The first chapter in the third part on "The Ordinary Machinery Provided by the Law" gives the usual procedure for handling a case in court, which is followed by cases showing how courts proceed in assessing damages and how those cases are treated where specific performance can be had.

The last portion of the third part relates to credit contracts and the law as it applies to the different methods of giving credit and safeguarding the creditor. This method of treatment brings together a number of subjects usually discussed separately, but which from a business man's point of view are happily combined. The part concludes with a rather full treatise on insolvency and the operation of the bankruptcy laws. This last portion ignores the

case method and gives a clear statement of the law in the lucid language of the authors to which assuredly no reader will object.

The last part of the work is devoted to an interesting and informing discussion of "The Law of Business Organization." It is open only to the objection that it, like the other portions of the book, is possibly too scholarly and philosophic for any but those mature and intelligent readers for whom the authors candidly state "it is best adapted." For a person with some familiarity with legal expression and point of view, it is all good, well written material.

The book as a whole is of high character, ably worked out, and of interest and value to any well educated business executive or accountant.

THE ADVERTISING HANDBOOK

By S. Roland Hall, Advertising Counselor; Former Advertising Manager for Alpha Portland Cement Company and Victor Talking Machine Company; Former Principal, International Schools of Advertising and Salesmanship. 743 pp. McGraw-Hill Book Company, Inc.

Reviewed by George B. Hotchkiss*

Practitioners and students of advertising have been particularly fortunate in the past few years in the number and quality of the new books that have been placed at their disposal. The majority of these books have dealt with a single division, such as Copy, Typography, or Display. Few authors have a comprehensive enough grasp of all the varied sciences and arts that enter into advertising to warrant the attempt to cover the whole field.

Mr. S. Roland Hall is one of the few. His varied experience as Advertising Manager and Advertising Counselor, together with his work in teaching have abundantly qualified him for the task and he has had the courage to attempt it. He does not offer the book as an encyclopedia of principles and methods, but modestly calls it a handbook, though the size of the volume might seem to justify the more ambitious description.

Mr. Hall has admirably stated his purpose in the foreword:

> This book has come into existence because its author and its publishers believe that there is a growing field of usefulness for a more comprehensive handbook of advertising practice than has up to this time been available.
>
> If it shall be said by the readers of this volume that it deals largely with principles and practices that are generally accepted as being sound, and that it contains a relatively small amount of the "new thought" of advertising, the answer to that criticism must be that its author, in writing and compiling the text, sought to be of assistance to the general business reader, the one of small or moderate advertising experience, rather than the professional advertising man.
>
> After all, the weaknesses of advertising are due largely to the neglect of the primary principles of the art, the things that are understood to a greater or less extent but not executed carefully. A book is not, therefore, necessarily less useful to the man of reasonable experience because it deals with the fundamentals and the accepted practice.
>
> There are perhaps a few thousand advertising practitioners so well advanced in the art of their business that they can learn nothing from a well compiled reference book. There are, on the other hand, tens of thousands of business men interested to some degree in advertising who have frequent occasion to refer to and review such information as is contained in these pages. And there are many younger men and women studying the art of advertising who will find such a volume as this a friend in need.

There is no question that the author has succeeded in his purpose. He has packed within two covers a vast amount of information on nearly every conceivable phase of advertising. Not all are included, of course; the line had to be drawn some-

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where. In some respects his choice seems open to criticism. For example, he devotes a whole section to the problem of advertising the large retail store, but neglects to give suggestions on advertising the small retail store, the small bank, and other small institutions which are usually unable to employ agencies or expert advisors and who apparently would have most to gain from such a book. They can apply to their own problems the general principles stated in the sections on typography, display, layouts, illustration, and copy, but an additional chapter or two on their specific problems would surely have been appreciated.

In other respects, also, the book appears to be a little unbalanced, though proportion is always a matter of individual judgment and no two authorities would be likely to agree as to the amount of space that should be devoted to the discussion of different classes of mediums, for example. Religious publications and calendars each receive a chapter (though a small one) whereas the important groups of publications devoted to men's avocations and interests, such as sports, moving-pictures, society, country life, and the like, are scarcely mentioned. Practically no attention is given to the highly artistic and refined types of advertising that are to be found in the columns of publications of high cost and carefully selected "class" circulation. Though not a serious omission it does deprive the book of examples which reflect the highest developments of advertising art.

The author in his foreword, however, has forestalled criticism of this sort by distinctly stating his conservatism. In some cases he seems too cautious. Far too frequently he falls back upon the statement "There can be no general answer to this question" or words to the same effect. In discussing the relative value of morning papers and afternoon papers he says:

"There can be no general answer to such a question. The increased popularity of the afternoon paper is shown by its supremacy in point of numbers, but whether a morning paper is to be preferred to an afternoon paper depends on the field in which the advertising is to be done and what the advertiser is to advertise."

This is unquestionably true, but not of great help to the prospective advertiser who must choose between them. It would be easy enough to mention a few classes of advertisers who spend the bulk of their appropriation in evening papers and a few classes who spend the bulk of theirs in morning papers. In other instances, likewise, the author's excess of caution has prevented him from making specific statements which would hold true in the majority of cases, though they might be qualified by certain exceptions.

On matters of technique, such as copy, proofreading, making layouts, types, and printing practice, and the like, the author's treatment is admirable. These sections are, after all, the backbone of the book, and although they contain little that is not to be found elsewhere, they have included the cream of all that has previously been written and printed on the subject.

What is equally important, the presentation of principles is simple, direct and well organized. There is no attempt at "fine writing," but instead a conscientious purpose to give the reader a maximum of good advice in a minimum of space.

Consider, for example, his handling of the common fault of using weak generalities:

Generalities instead of Specific Statements—This is the most common of all weaknesses in advertising. "The best shoe on the market." Why is it best? Has it more style, more comfort, greater wearing qualities, and how does it happen to have such qualities? That is what the public wishes to know. Maybe there are thousands who will believe the statement that "Somebody's Tires are Good Tires," but the message is more likely to be believed if the advertiser tells something about material used, methods of making, or gives some proof, experience, or assurance that the tires do give unusually satisfactory service.

"Richest ice-cream on the market" does not make the definite impression that is conveyed by a statement about the percentage of butter-fat contained in the cream.

An advertiser has remarkable faith in his public if he thinks that such a statement as "We use the greatest of care in making and inspecting our machines" will be believed. If he can truthfully say that every machine passes ten tests for perfect working, his chance for being believed is largely increased. "Finest raw material" does not mean as much when applied to cutlery as "Every blade of Swedish steel."

One of the most difficult kinds of advertising to write is that soliciting money for charity. Yet when a New York newspaper published a page giving the details of "New York's 100 Neediest Cases," a total of more than $100,000 was sent voluntarily. The public was deeply interested in the details of the different cases, though exact names and addresses were concealed. These specific facts built pictures in the imaginations. Had the New York Charity Organization published merely the general statement that "Hundreds and thousands of families right here in our own cities are in dire need of the necessities of life" the statement would have been too general, too common, to make an impression that would have brought results.

It is a little unfortunate, perhaps, that the examples of corrected proof with the corresponding proof as revised and similar parallels of layout and finished advertisement usually differ in size. The comparison of the two examples would be facilitated if they were of equal size. It is likewise unfortunate that typographical errors are so numerous and page references occasionally inaccurate. These, however, are to be regarded as blemishes rather than defects.

A serious defect is the inadequacy of the index. A book that is avowedly for reference purposes should contain an index so comprehensive that the user could instantly find any point he sought. Subsequent editions of the book, no doubt, will make amends for what appears a deficiency in this first edition. Subsequent editions will be required. There is no question of that fact. Every progressive business man who has anything to do with advertising, will want to have "The Advertising Handbook" within his reach for ready reference.

POPULATION AND ITS DISTRIBUTION

Compiled by J. Walter Thompson Company. x, 335 pp.

Reviewed by Bert Barnes *

The figures given in this book on the distribution of population are based on the United States Census of 1920, while those on distribution of retail and wholesale dealers are compiled from various trade sources.

The compilers very frankly outline the sales problems which led to the publication of this book.

In 1904 one of our clients who sold his product direct to the retailer, stated he could afford to have his salesmen cover all towns of 2500 or over. Except in very large cities, he sold through exclusive dealers. He had 300 accounts on his books.

On referring to atlases it developed that there were 1391 towns of 2500 population or over. Obviously he had only 42 per cent distribution.

It would seem that the incentive to secure the great volume of new business possible would have led to immediate action; but such was not the case.

The additional towns could not be added profitably by merely adding salesmen. Salesmen already covering the territories would have to be re-routed. Personal readjustments for men old in their respective territories were involved—in fact the whole chain of circumstances which unless faced with determination leads to the indefinite postponement of action. Unless the necessary readjustments were faced, however, this manufacturer's business would not grow beyond the increase in volume from existing accounts. New accounts added under the old system would not more than offset the loss among old accounts.

As a starting point for the work of readjustment a list of every town in the United States of 2500 inhabitants and over was made for this client. These towns were grouped by states and by size.

So useful were the original typewritten sheets on this problem and so immediately did they come into demand for the solution of similar problems that, as soon as the figures of the 1910 census were available we compiled in book form the original issue of *Population and Its Distribution.*

In the great majority of businesses just such problems as that company faced are continually arising.

The earlier editions of this book have been found extremely useful to executive

* Editor of *The Blue Pencil*, a magazine edited and made for editors of employees' magazines.

heads of manufacturing corporations. The book, in fact, furnishes facts which the manufacturer must have for a closer analysis of markets.

To show not only the subject matter, but also the mode of treatment the state of Kansas may be taken by way of illustration.

Under a map which shows the location of cities of 50,000 or over the following figures are given:

Population	1,769,257
Area in sq. mi.	81,774
Pop. per sq. mi.	21.6
Per cent of U. S. pop.	1.7

Additional data is then given as follows:

Farms (U. S. Census 1920)	165,286
Post offices (U. S. Postal Guide 1920)	1,157
Miles of rural roads (Office of Public Roads 1919)	111,052
Miles of improved roads (Office of Public Roads 1919)	1,550
Miles of R. R. line (Interstate Commerce Commission 1917)	9,383
Miles per 100 sq. mi. of territory	11.47
Miles per 10,000 inhabitants	50.54
Autos and trucks registered (Jan. 1, 1920)	228,601
Telephones (Census of Electric Industries, 1917)	298,273
Electric passenger cars (Electric Railway Directory, 1920)	369
Electrically wired houses (Electric World Survey, 1920)	145,700
Central power stations (Electric World Survey, 1920)	335

Following this treatment, for each state in the Union is information of equally great value. Corporation and personal income and tax returns, subscriptions to the Fourth Liberty Loan, and the number of telephones, farms, post offices, central power stations, automobiles, and trucks registered, and the miles of railroads, rural roads, improved roads, etc., are given by states.

The trade information tabulates the distribution of thirty separate classifications of dealers in each city of 50,000 inhabitants and over and then by states.

This is a book that every sales manager should have at his command for it gives in complete and compact form that knowledge which is so essential to the formation of all sales plans—the distribution of population.

BRIEF ANNOUNCEMENT OF NEW BOOKS

The Guaranty of Bank Deposits. By Thomas Bruce Hart. Houghton, Mifflin Company.

Organization of the Boot and Shoe Industry in Massachusetts before 1875. By Blanche Evans Hazard. Harvard University Press.

The Problem of Estimation; a Seventeenth Century Controversy and Its Bearing on Modern Statistical Questions, Especially Index Numbers. By Correa Moylan Walsh. P. S. King and Son, London.

Art Appeal in Display Advertising. By Frank Alvah Parsons. Harper and Brothers.

Advanced Business Correspondence. By George Burton Hotchkiss and Edward Jones Kilduff. Harper and Brothers.

Mine Accounting and Cost Principles. By Thomas Orrin McGrath. McGraw-Hill Book Company.

Finding Your Job. By Norman Shidle. Ronald Press Company.

How to Get the Job You Want. By William L. Fletcher. Houghton, Mifflin Company.

The Romance of Business. By W. Cameron Forbes. Houghton, Mifflin Company.

Bankers' Credits and All That Appertains to Them. By W. F. Spalding. Sir Isaac Pitman and Sons.

British Year Book of International Trade. Edited by C. M. Picciotto. Henry Frowde, London.

Modern Irish Trade and Industry. By E. J. Reordan. Methuen and Company, London.

American Power Resources. By C. G. Gilbert and J. E. Pogue. The Century Company.

Merchandise Manual for Shoe Departments. Shoes; Merchandise Information for Sales People. By E. Dyer. Research Bureau for Retail Training of the Carnegie Institute of Technology, Pittsburgh.

Kritik des Taylor-Systems. By G. Frenz. Julius Springer, Berlin.

History of the United Mine Workers of America from the Year 1860 to 1900. 2 volumes. By Chris Evans. United Mine Workers of America, Indianapolis.

Accident Prevention and Safety Handbook. By Fred C. Lange. Doubleday, Page and Company.

The Financing of Present-Day Needs. By Mortimer L. Schiff, Kuhn, Loeb, and Company, New York City.

This pamphlet is not a review of what is past, nor is it a prophesy of the future; but it is, as its title would suggest, a condensed discussion of the financing of present-day needs. In its 45 pages the subject is discussed from but one angle, namely, the financing of domestic industrial needs by the issue of securities and their sale to the public.

The work is treated under three heads—"How Securities are Marketed," "Regulation and Legislation," and "Financing Present-Day Needs."

In the section "How Securities are Marketed," the author assumes that his reader knows nothing whatsoever about securities; where, how, or by whom they are sold. Thus taking the A.B.C. attitude Mr. Schiff takes the key-word of his subject, securities, and explains in plain business language what, how, and why they are. This first division is really an introduction to the work proper. It is a necessary foundation upon which to build the real discussion found in parts two and three.

The author opens his discussion by defining securities. This definition is followed by an explanation of how high-grade securities are, as a rule, sold in large lots to issuing houses. These issuing houses, if the amount involved is large, distribute the risk by forming a syndicate and, generally speaking, sell primarily to the smaller investment houses throughout the country. So the explanation proceeds, taking in turn the New York Stock Exchange as a market place; the speculators place in the security market; how issuing houses and investment bankers buy at wholesale and sell at retail; problems involved in corporate financing; and sundry other questions which are discussed in books on economics.

Mr. Schiff seasons these discussions with interesting editorial comment. He explains in three short paragraphs why the Stock Exchange should not be incorporated. His reason is as follows:

As the situation is now they can and do get rid of undesirables without much difficulty, while if the stock exchanges were an incorporated body, the proceedings to eliminate those who were doing harm would be far more difficult.

Nowhere in the world is the standard of honesty and fair dealing higher than it is on the New York Stock Exchange and transactions involving millions are often done on simply the spoken word, without any written contract passing until considerably later.

The author does not deny that at times there has been manipulation, and particularly in stocks of companies with a small capitalization closely held. "But the Stock Exchange authorities are most vigilant as to this" he says, "and have given clear evidence as to their readiness to apply the most drastic remedies in case of need."

Mr. Schiff says:

Occasionally artificial maintenance of prices has resulted from the pride and confidence in their securities shown by owners of large enterprises, who resent any evidences of undervaluation of these securities.

They have usually paid dearly for the experience not realizing that as a rule market quotations are a fairly accurate barometer of values, as they exist at the moment, and that buying up at artificial prices all that is offered by those who wish to realize on their investment—and particularly if done with borrowed money—is in the long run a losing game and brings its own remedy.

The value of a banker as a professional adviser is pointed out in this first section of the pamphlet. In order to determine the type of security, the amount to be offered, and the terms and conditions of the issue, exact knowledge is required and this can be furnished only by bankers experienced in this line of business. The writer further comments that the banker's compensation depends upon his soundness of judgment. Thus differing from other professional advisers, the banker takes the risk of his advice being sound by assuming the financial obligation involved in the purchase of the securities. There is also a risk for the banker in handling large security issues. Mistakes of judgment are

made, unforeseen circumstances arise, conditions suddenly change, and what was expected to be a successful offer turns into a failure.

One of the reasons the author gives for the price decline of large issues of high-grade bonds heavily oversubscribed is that as a rule the dealers and investment houses throughout the country have subscribed for more bonds than they had definitely sold to their customers, doing so because they believed that the demand would continue and that they could gradually place among others of their customers what they had taken for their own account. If they find themselves mistaken in this they dispose of their holdings where they can, as they do not wish to lock up their capital. This is of sufficient volume, may force a material decline in the market price of the security, and that is where the issuing houses and their syndicates must step in and take up the slack until a further distribution among the investors can be developed.

In caring for the financial needs of corporations Mr. Schiff writes:

> It is equally important that corporations have definite assurance that their financial needs be supplied. They cannot afford to miss the opportunity, particularly if larger amounts are involved, to secure the needed funds on the most favorable terms consistent with the interest of the investing public.
>
> This can be done, however, only if advantage can be taken of the proper moment for the offering of the securities in question, which necessitates making firm contracts with bankers and permitting them to go ahead with marketing the securities.

In the concluding discussion of section I, corporations are again advised of the desirability of continuing relations with bankers. It is explained that the relationship between corporations and the bankers handling their financing can rest only on service and mutual confidence, and if at any time the bankers do not render fair and adequate service, the relationship becomes an impossible one and must terminate.

On the other hand, bankers are entitled to expect, if their services are satisfactory, and their advice and judgment are continuously at the disposal of the corporation, that they shall have the first opportunity to purchase the securities issued by the corporation, and particularly so if such securities are created and issued as the result of the advice they have given. Mr. Schiff believes that the fact that a leading banking house stands sponsor for a corporation's securities is in itself a great advantage to the corporation and results in a better demand for its securities by the investing public.

The most interesting part of the pamphlet is section II, dealing with regulation and legislation. It is here that the author gives some straight-from-the-shoulder facts as to why regulation by legislation is not a "cure-all" as is so often believed.

By too much legislative regulation there is now superimposed commission upon commission with duplication of functions and conflicts of authority; and yet the country wonders why the wheels of industry and business do not move smoothly. The writer does not disapprove of legislation properly applied, but of the false idea that legislation is a cure for every situation which needs, or is believed to need attention.

He says:

> Unfortunately regulation in its final analysis is often the substitution of the judgment of some obscure clerk of a commission or of a government department for that of those in charge of the enterprise.
>
> You cannot make honest men by legislation and the crook will find other means to accomplish his ends, while the reputable business man is throttled. I believe in regulation to stop abuses, special privileges and unfair practices, but let us be sure first that these exist and that they will be cured by the means proposed.

Of the foolish laws now in existence, section 10 of the Clayton Act, driving bankers off railway boards so as to prevent their dealing with such companies, is pointed out as one of the most absurd. For if such bankers really controlled a company all they would have to do would be to elect dummy directors who would simply follow their instructions. If they do not control, Mr. Schiff points out, it shows a poor opinion of American business men, acting as officers and members of the Board of Directors of such companies, to believe

they would let themselves be influenced by a banker on the board to do improper acts or to make unfavorable trades with him in their securities.

The writer further comments that the only way in which a banker can make his advice and judgment effective is by service as a director and this service he is now prohibited from performing on pain of ceasing all business connections with such companies.

That there is a need for the strengthening of the criminal statutes, particularly those defining and dealing with fraud, Mr. Schiff is convinced. He thinks there should also be provision by federal, state, county, and municipal authorities of sufficient funds to enable officers of the law to discover, prevent, and punish fraudulent practices.

He enforces his convictions by giving in part a report prepared on the various classes of losses by a commission appointed in 1919 by Governor Alfred E. Smith, of the state of New York.

"If there is to be legislation," the author says, "it must be along the lines of the Federal Pure Food Act, so as to give publicity as to what the security is and the property behind it, but not as to its value. It must not go too far, however, and must not be such as to interfere with legitimate business."

Part III dealing with the financing of present-day needs is a series of four splendid editorials appealing for co-operation between all elements in the community. There is need for a mutual faith and understanding between capital and labor, each must learn to realize the problems and difficulties of the other.

"There is no shortcut to creating an ideal world," says Mr. Schiff. "We must work out our problems, bearing in mind that there are two sides to every question."

The causes of the present unsettled situation are summed up as follows:

> The war with its fearful waste in human lives and treasure; Europe struggling with a peace treaty built on unsound economic lines; too much wild cat promotion; too many indigestible securities forced on unwilling markets for political and other purposes; too much speculation by those whose time and energy should have been devoted to their own business; too much short-time borrowing for capital and unrelated expenditures; and too much paternalism and interference with primary economic laws.

In conclusion Mr. Schiff says:

> After all the real test of a security is its quality, not its salability, and bankers must have the courage to refuse accommodations to their customers if wanted for unsound purposes. It is not a question of whether a security issue will be absorbed by the public, but whether it is one which should be offered to the public.

This last section of the pamphlet is especially worth while for executives because of the sincere appeal made to business men for the present-day need of common sense, not nonsense; for sound thinking, not wild ideas; for realities, not theories; for fixity of purpose, not sail trimming; for frankness, not bluff; for accuracy, not guesswork; for thrift, not waste; for hard work, not loafing; for co-operation, not individualism; for fellowship, not class hatreds.

Handbook for Transcribers and Dictionary of Dennison Terms. Dennison Manufacturing Company, Framingham, Mass.

That Compendium of *Atlantic* usage, "Text, Type, and Style," which was reviewed last month by Frances Lester Warner, a member of the editorial staff of *The Atlantic Monthly*, commends this booklet on page 62 as follows:

> A little book published by the Dennison Manufacturing Company gives a good idea of the care with which business typists are trained to write — with almost as close attention to matters usually connected with typography alone, as is demanded of compositors.

In the columns of *Administration* attention has been repeatedly called to the importance of business letters. On this point the Dennison handbook speaks as follows:

> A house is judged by its letters, and appearance, whether good or bad, often has a lot to do with the result. Many a well-dictated letter has failed in its purpose because it was smudgy, poorly arranged, and misspelled. Such a letter does not inspire confidence, and it distracts the reader's attention from the subject.
>
> Dennison letters must, of course, be good-looking letters. Neither the company nor the transcribing department will be satisfied with anything less than quality work; and to assist

you in doing your part well, we have brought together in the following pages the points which are important in transcribing letters, and which, if closely followed, will lead you up to the Dennison standard of quality.

The standard form for a Dennison letter given by way of illustration on page 6 is a model of all a business letter should be.

The chapter on general appearance points out the mistakes commonly made in letters, among which are listed the following:

> Mistakes in typewriting. The most common are strike-overs, which spoil the whole appearance of a letter. Use an eraser when mistakes are made, as strike-overs will not be passed as good work.
>
> Running two words together is another fault. It does not remedy matters to draw a line between them—the mistake is there just the same. Strike the space bar firmly so that words will not run together.
>
> Do not try to squeeze two letters in the space that is intended for only one.

A chapter is devoted to the structure of the letter and another one to the style of address for the envelope.

One of the most useful chapters is that which deals with punctuation, the purpose of which is stated as follows:

> Punctuation is needed to make reading clear. If it is used correctly, letters will easily be understood, whereas careless punctuation may entirely destroy the meaning the dictator wants to convey.
>
> There is danger in using too little or too much punctuation; too little in a long sentence makes reading tiresome, but too many commas make it difficult to follow the thought expressed.

How one of these handbooks may be adapted to specific purposes is well illustrated in that part which is entitled "Dictionary of Dennison Terms." Briefly this consists of the words and phrases used in business correspondence about the Dennison products. It was compiled to solve the special problems of the dictaphone transcriber.

This booklet was intended only for house consumption but the Dennison plant enjoys an enviable reputation for courtesy. To a limited extent doubtless copies could be secured by an application to the Supervisor of Correspondence, Dennison Manufacturing Company, Framingham, Mass.

Profit-Sharing Plan. The New Albany Veneering Company, New Albany, Indiana.

Fifty-fifty profit-sharing division with employees, after 10 per cent has been set aside on the capital stock—this is the yearly profit-sharing plan which is being tried by the New Albany Veneering Company of New Albany, Indiana and which is briefly outlined in this six-page bulletin.

Profits are divided on the basis of days worked and not on the basis of rate of pay. This means that the highest paid and the lowest paid worker and all between will receive the same amount, either in stock or in cash, at the option of the directors, providing the number of days worked is the same.

Only employees engaged regularly and continuously for a period of three months or longer in the regular business of the corporation shall be included in the plan. Persons hired for special work, though their employment may extend over a period of more than three months are not included. Others not eligible for profit-sharing are employees who wilfully and persistently refuse to perform efficiently tasks assigned, and are therefore subject to immediate discharge.

Any employee on the pay-roll at the beginning of a period, who voluntarily leaves the services of the company before profit distribution, forfeits his share. However, if, because of death or serious injury any employee is forced to give up his work after having been employed for a period of three months, he, or his estate will be entitled to participate in the distribution of profits for that period, on a basis of the actual number of days worked.

In order to discourage the tardy habit and to reward prompt service employees ringing late on the clock or laying off any part of a day will, in computing the share of profits, be charged one full day for each time recorded.

Three representative workers, elected by the employees, and the board of directors of the corporation constitute a committee to hear and pass upon complaints presented by the employees. This committee has the power to decide whether complaints are of sufficient importance to warrant further consideration. If so the complaints are presented formally to all the employees, the

majority vote then deciding what disposition shall be made of the case.

The pamphlet is remarkably clear because the profit-sharing plan is treated under various clauses presented in much the same form as a lawyer's brief.

Pacific Coast Petroleum Industry. The data of this bulletin comprising 275 pages, covers production, ownership, and profits. The first part of the report discusses the question of petroleum supply of the United States, a matter of widespread general interest in view of the constantly increasing demands of petroleum products.

Of peculiar interest to business men and executives, however, are the pages of the report covering methods of ascertaining costs and profits of the leading oil companies of the Pacific coast. The prevailing system of depreciation accounting and the various rates of depreciation applied in the different branches of production and distribution of petroleum and its products are fully set forth.

The document can be obtained from the Secretary of the Federal Trade Commission, Washington, D. C.

The Deadlock in Public Utility Regulation. By John Bauer, Ph.D. Public Utility Adviser to the Corporation Council of the City of New York.

In this pamphlet, the first of a series of four on the same subject, Mr. Bauer deals with a phase of the situation, under the subtitle "Collapse of Credit."

It is the opinion of its author that the destruction of credit due to lack of funds for reinvestment, and the consequent curtailment of improvement and extension of service might have been avoided by sound regulation of rates.

Developing this idea, he adds:

> In fixing reasonable rates the commissions should have allowed, according to sound financial policy underlying credit requirements, net earnings above operating expenses and taxes equal at least to 50 per cent above the so-called "fair return" on investment or the value of the property. The "fair return" should have been available as interest and dividends to the investors, and the excess should have been invested in property for the extension and improvement of service. In this way the financial needs would have been largely taken care of out of income, and the credit would have been placed so high that the companies could readily have borrowed any sums required beyond the investment of surplus.

Under the heading "Surplus Earnings Must be Segregated" the author advises keeping distinct the funds contributed by consumers from those invested by security holders.

His suggestion reads in part:

> Then, in the fixing of rates, the commissions should have allowed all reasonable operating costs and taxes, plus a fair return on private investment (distributable as rent, interest or dividend payments) plus also a reasonable sum for additions to capital; but not also a return on the investment thus made by the consumers through the payment of rates. The private investors should not obtain an additional return through the special contribution of funds by the public.

He continues:

> Such a systematic policy would have required the commissions to fix definitely the amount of the private investment and to determine exactly the returns to which the security owners were entitled. Then, in fixing rates with changing conditions, the commissions would have had a precise basis in providing a "fair return," and would have avoided the possibility of allowing more than the investors were entitled to receive.

That without the certainty of returns to investors, new capital cannot be raised, and that in order to do this our methods of regulation must be improved, Mr. Bauer points out very clearly. He concludes with the question; "Can certainty be established or must regulation be given up because of inevitable unwieldiness?"

CHRONICLE AND COMMENT

WAGE SCALES

The Department of Labor, through the Bureau of Labor Statistics, is making a study of the methods of adjusting wage scales, and concluding collective wage agreements where cost of living figures enter into the wage adjustment. To that end, the Bureau of Labor Statistics wishes to communicate with the various companies, members of arbitration boards, labor managers, or others who are using cost of living figures in the determination of wage awards.

If any reader of *Administration*, who has not already communicated with the Bureau, is using cost of living figures in the adjustment of wages, it will be appreciated by the Bureau if he will write to the Commissioner of Labor Statistics, Washington, D. C., and inform him of that fact.

A PRACTICE LINE

The editorial page is often said to be the weakest feature of modern journalism. Be that as it may, every now and then an editorial is written that goes from one end of the country to the other. A good example is "What is the matter with Kansas?" originally printed in *The Emporia Gazette* edited by William Allen White. Another editorial which is constantly reprinted is "Is there a Santa Claus?" published originally in *The New York Sun*. Such editorials become newspaper classics.

Employees' magazines have been rather weak from the editorial point of view. Occasionally, however, an industrial house-organ has really had something to say and its comment has been extensively quoted by its contemporaries.

Recently there appeared in *Flashes*, the employees' magazine of the American Ever-Ready Works of the National Carbon Company, an editorial which has attracted the attention not only of employees but also of executives. The latter frequently use this editorial as a basis of a little talk to employees.

Because of such extensive use *Administration* is reprinting the editorial:

"*Now is the time for all good men to come to the aid of their party.*"

That is the famous practice line for student typists, the coming stenographers, secretaries, executives, capitalists, and what nots? How many hundreds of thousands of times that line has been pounded out. By the young, by the old; male and female. Through the long day and into the wee small hours of the night. In school, in office, in home. With numb and aching fingers; weary head and heart. With the burning hope and enthusiasm of Youth; and then of times on the brink of discouragement. Oh, the countless thousands who began with that one line! How oddly it was mistyped at first! How stiff the fingers seemed! But it grew more perfect and the fingers limbered as the days went on. But they mastered it—and more—and they succeeded! Nothing succeeds like Success!

There is the Lesson! Take one simple part, one line, in your work—whether it be in office or factory. Pound it over and over again—until you make no more errors—until you know it backward and forward—until you are sure of yourself. After you have accomplished that, take another line and master it, too, and so on—into Success. For the Road to Success is not only through Work, but through Good Work. And, forget not, that Good Work comes only of Concentration.

INCENTIVE BASIS

Incentive basis of payment has proved a big success with the Merchant Shipbuilding Corporation, according to an article in *The Chester Compass* by E. J. Fleming, Supervisor of Rate Setting. If the shipbuilding industry is to survive with the keen foreign competition each person so engaged must resolve to do his utmost.

Mr. Fleming says:

> With the object in view of helping each workman to determine what is expected of him, practically all the operations necessary to complete the finished product in the Merchant Shipyard are analyzed and a certain value placed on them which will enable the ordinary workman, if he diligently applies himself, to secure greater earnings than he would ordinarily receive, working on a day-rate basis.

The value placed on each operation forms a basis for piece-work, and the summation of values of each operation forms the basis of sub-contract with a certain percentage added for contingencies that are expected to arise.

The many methods of incentive payment, vary with the class of work to be performed. Payments used in the Merchant Shipyard are determined for each craft with the view of giving to both the workmen and the company a mutually square deal.

The method used in placing any class of work or department on an incentive basis is through outlining and planning the work to be performed.

Each operation is planned by the Rate Setter from source to finish, so that every move made by the workman will be productive. After the work is planned and the rate determined, the Rate Setter keeps a check on the work to see that the plan is worked according to method outlined, which if carried out will give the workman earnings greatly in excess of his hourly day rate.

The attitude of the management toward the workman is shown by the following quotation:

It does not seem fair to the man who is highly skilled and always on the job to receive only the same compensation as the workman who is not as qualified. The salesmen representing sales houses are all as a rule paid a commission for the sales they make over and above what is expected of them, and the salesman whose sales are greater than the other fellow receives more compensation for his efforts. The same principle applies to the man who is producing what the salesman is selling, having the same relation. Both the man who sells the product and the man who produces it are in reality selling their services, and their value to their employer is based upon the results they show. The value of the salesman is shown in the sales he makes and the value of the workman is reflected by the cost of the work he produces. Therefore the most logical way for the workman to show his value is to produce his work for a standard cost and at the same time be rewarded for his efforts through piece-work or bonus-work.

CIVIC FEDERATION

The National Civic Federation has announced a national industrial committee the purpose of which is to bring together representatives of the labor movement, employers who believe in conferring with labor and the public.

Those who are on the committee include: Former President Taft, Samuel Gompers, president of the American Federation of Labor, Alton B. Parker, John Hays Hammond, Daniel Willard, former Secretary of Commerce Redfield, August Belmont, T. Coleman du Pont, John B. Ryan and Talcott Williams.

This committee is to consider such questions as Collective Bargaining, Compulsory Arbitration, Injunctions in Labor Disputes, Shop Committees, Industrial Democracy, Open Shop Movement, and Unemployment. The committee has the official approval of the President and of Secretaries Davis and Hoover.

RIGHT PRICES

In the course of an address on the present business situation before the West Virginia Bankers Association, Dr. Benjamin M. Anderson, Economist of the Chase National Bank of New York City, emphasized the importance of the restoration of "right prices," and he defined right prices as "prices which will move goods." He also expressed the opinion that the time had come for the United States Government to issue a new funding loan to take up the outstanding Treasury Certificates of Indebtedness. These certificates are largely held by active business corporations which have temporarily idle funds. This situation constitutes an obstacle to business revival, since with any increase in business activity, these corporations would promptly throw the burden of carrying the Treasury Certificates back upon the banks, which would lead to a tightening of the money market and interfere with the incipient upward move in business. He urged that the government should transform its borrowings into long-time bonds which active business corporations would not hold, and which would have to be carried by true investors.

On the subject of right prices Dr. Anderson spoke as follows:

The question of right prices has been discussed too much as if it were a moral question. In the Middle Ages it was chiefly discussed by clergymen and largely on a theological basis. The

idea that prices are morally right or wrong, just or unjust, is an idea which has real meaning only in the case of a very narrow market, as a local retail market, where one party to a buying and selling contract is pretty much at the mercy of the other. But in the great markets, where there are many buyers and sellers, questions of moral right and wrong have little to do with the matter. The question is an economic question. Those prices are right from the economic standpoint which keep the industrial machinery moving. *"Right Prices" may be defined as prices which will move goods.* The way to reach right prices and to find out what right prices are is to have a flexible, competitive, two-sided market, and to let prices go up or down in such a market until supply and demand become equalized. Then goods will move, the markets will be cleared, new supplies will be called for, and business activity will go on. If prices are held above the point which open, two-sided competition would bring about, the tendency is for consumption to fall off and for stocks to accumulate, creating a glut. If prices are artificially set below the level which open market conditions would bring about, the tendency is for consumption to go too fast and for production to be checked, leading to a scarcity. If prices are left free from artificial control, however, and if sellers, as well as buyers, really compete vigorously and effectively with one another in the price-making process, right prices can be reached and business revival can come. We have undoubtedly made progress in the direction of right prices in recent months, and business revival is consequently just that much nearer. There remain, however, six main classes of resistance points:

1. The prices of finished manufactures are still much too high as compared with farm products and raw materials.
2. Retail prices have not yielded adequately.
3. Wages are still too high by and large, though scaling down of agricultural wages in the South has gone very far, and agricultural wages have yielded greatly in some other parts of the country. But wages in manufacturing industries generally, and very especially wages on the railroads, in the bituminous coal fields, and in the building trades, are still much too high.
4. Building materials are too high.
5. Steel has not yielded adequately.
6. Railway rates on steel, building materials, and other bulky goods are much too high, though some readjustment has been made.

Right railroad rates from the standpoint of the railroad company itself are rates which will move traffic, rather than rates which stop traffic. The old-fashioned railway rate-makers knew this. They made their rates, not wholesale, but piecemeal, with reference to "what the traffic would bear," and found it best for the railroads themselves to charge low rates on bulky stuff, which would cover the direct costs of moving the bulky goods, together with some contribution to the overhead expenses of the railroads, rather than to charge much higher rates at which the bulky goods could not move in volume.

Right wages are wages at which full employment can be brought about. It is far better that labor should have full employment than that a part of the labor force should be employed part of the time at very high wage rates. We cannot banish moral principles from the determination of wages, as we can from the determination of market prices of goods. But the very best friends of labor must appreciate that wages which are so high as to make it impossible for employers to produce goods at prices which the market will pay are of no advantage to labor. The far-sighted business man will not be eager to reduce wages more than is necessary. The far-sighted union leader will seek to reconcile his followers to such wage readjustment as is necessary to facilitate business revival, knowing well that a greatly prolonged depression would lead to disastrous breaks in wage standards.

SALESMANSHIP

Some of the best advise for young men will not be found in the formal addresses delivered by big executives in academic halls. No better counsel was ever given to "the executives of tomorrow" than the following advice, taken from *The Milapaco News*, a better business publication, issued by the Milwaukee Lace Paper Company:

Every young man should some time in his life have experience in salesmanship.

Selling goods is the best-known cure for those elements in a man that tend to make him a failure.

The art of success consists in making people change their minds. It is this power that makes the efficient lawyer, grocer, politician, or preacher.

There are two classes of men: one seeks employment in a position where he merely obeys the rules and carries out the desires of his employer. There is little or no opportunity for advancement in this work. You get to a certain point and there you stick.

Such posts are a clerkship in a bank, a government job, such as letter-carrier, a place on the police force, or any other routine employment requiring no initiative. These kinds of work are entirely honorable and necessary. The difficulty is they are cramping, limiting.

Some day you may have to take a position of this sort; but first try your hand at selling things.

Be a book agent, peddle washing machines, sell life insurance, automobiles, agricultural implements or peanuts.

You shrink from it because it is hard, it goes against the grain, as you are not a pushing fellow. And that is the very reason you need it.

Salesmanship is strong medicine. You have to go out and wrestle with a cold and hostile world. You are confronted with indifference, often contempt. You are considered a nuisance. That is the time for you to buck up, take off your coat, and go in and win.

For the youth that proposes even to enter the ministry, a year's drill as canvasser for an encyclopedia is of more value than two years in the monastic seclusion of a theological seminary.

I cast no slurs upon faithful occupants of posts of routine. They have their reward.

But, son, don't look for a "safe" place. Don't depend upon an organization to hold your job for you. Don't scheme and wire-pull for influence and help and privilege.

Get out and peddle maps. Make people buy your chickens or your essays. Get in the game. It beats football.

Executives who may be called upon to address a group of salesmen will find in the preceding quotation a number of points that are well worth elaboration.

Some executives fail because they are unable, for this or that reason, to sell themselves to employees. On the other hand, during the dull time through which we are now passing, several salesmen have secured desirable positions because they knew how to sell themselves through letters of application.

EDUCATIONAL CLASSES

In *Administration* for July, Walter Lichtenstein, Executive Secretary of the First National Bank of Chicago, reviewed "Practical Bank Operations" which deals with the work of the National City Bank of New York City in general and with the work of its educational department in an incidental way.

To supplement Mr. Lichtenstein's remarks about the educational work done under the auspices of the National City Bank, the following quotation from *Number Eight*, the monthly magazine of the New York bank, will be of interest:

Nineteen National City men are well on their way to degrees of Bachelor of Commercial Science under the Club's annual scholarship plan. They are the members of last year's group selected to attend New York Preparatory School and New York University. With these, twenty more now will join, the ten first to obtain their regents' counts to enter college and ten more to enter college for the degree.

Although the entire group last year consisted of men, girls are eligible also to enter the competition for the new groups to be chosen.

Ten boys who have completed grammar school will be selected to enter New York Preparatory School to enable them to enter college.

Ten men who have completed high school will be selected to enter New York University to obtain a degree of Bachelor of Commercial Science.

Any member of the Bank, the City Company, or the International Banking Corporation may apply for one of these twenty scholarships. Applications may be obtained from the Educational Department and must be returned, properly filled out.

For those who enroll for the preparatory school course, one-half of the tuition fee will be paid by the Club and the other half by the applicant each year. However, upon the completion of the *entire* course the half which the applicant has paid will, in addition, be refunded by the Club. So that upon receiving the preparatory school diploma *every cent* of the tuition expenses will have been paid by the Club.

The same is true of scholarship applicants for New York University. One-half of the expenses will be paid by the Club each year and when the applicant obtains the degree of Bachelor of Commercial Science the other half in addition will be refunded.

This additional co-operation is offered by the Club in consideration of the applicant's following a certain prescribed course of specially conducted business and financial studies. The courses have been outlined with the idea of training the scholarship applicant for a career in the National City organizations.

The college courses may be taken either at the School of Commerce at Washington Square, or the Wall Street Division of New York University at Trinity Place. All of these classes, too, will be held at night, some of those in the Wall Street Division starting as early as 5:15 in the afternoon, while those at the Washington Square start at 6 or 7:45 p. m. The following is the four-year course tentatively outlined for the college work:

1st Year:
- Principles of Accounting
- Business Finance
- Business English

Contracts and Agency
Political Economy; Practical Economic Problems

2nd Year:
- Elementary Accounting Problems
- Theory of Accounting
- Money and Credit
- Theory and History of Banking
- Commercial Paper
- Operation of Partnerships, Limited Partnerships, Corporations, Bankruptcy, Receiverships and Assignments
- Banking Practice
- Foreign Exchange

3rd Year:
- Fiduciary Accounting
- Analysis of Corporate Reports
- Credits and Collections
- Business Mathematics

4th Year:
- Investment Accounting
- Panics and Depressions
- Investments
- Bank Accounts; Mortgages and Real Estate; Executors and Administrators; Insurance
- Guarantors and Sureties; Advertising and Marketing of Goods; Trade-Marks

UNIFORM COST ACCOUNTING

Editor of Administration:

The attitude of the Federal Trade Commission toward uniform cost accounting has long been a mooted question. It is hoped that the enclosed bulletin of correspondence between Mr. Nelson B. Gaskill, Acting Chairman, Federal Trade Commission, and the Manager of this Department, will go far toward clarifying the attitude of that body on this important subject.

The correspondence brings out three points:

1. That the Federal Trade Commission is strongly in favor of uniform methods of Cost Accounting as helpful to business.

2. That the work of the Commission would in fact be greatly facilitated by a greater uniformity in cost methods.

3. The above points are based on the assumption that the principles of cost accounting adopted are sound and that there is no effort to substitute for individual costs or margins, average or standard costs or margins.

There is no doubt that this clarification of the attitude of the Federal Trade Commission will provide a new impetus to the study of uniform cost methods by industry and you will doubtless wish to give your readers the benefit of this information.

Appreciating past co-operation received from you in the work of this Department, we are

Very truly yours,
(Signed) E. W. McCullough,
Manager, Fabricated Production Department, Chamber of Commerce of the United States.

The bulletin to which reference has just been made says:

Cost Accounting has for some time been recognized as one of the greatest needs of business, especially in industrial production. Realizing this need, many trade organizations have undertaken educational activities with their members, but with some hesitation on account of doubts regarding the attitude of public authorities.

In an endeavor to perform a service by obtaining a statement with respect to the activities in promoting uniform cost accounting which are proper, the Fabricated Production Department entered into correspondence with the Federal Trade Commission. This correspondence has made it clear that, from the point of view of the Commission, as expressed by the Acting Chairman, there is no bar, legal or otherwise to trade associations promoting cost accounting with their members within the limits outlined in the correspondence.

It contains the following letter to Mr. Nelson B. Gaskill, Acting Chairman, Federal Trade Commission, Washington, D. C.:

This department notes with considerable interest your letter of July 12 to Mr. F. J. Moss of Kansas City, Missouri, giving the views of the Commission in respect to its attitude toward the educational work of trade associations in connection with Cost Accounting.

We are quite in agreement with you that Cost Accounting which leads to the adoption of "averages" or "standards" to be used by the members of an industry is not only wrong but defeats the real purpose of cost research, which is to develop facts.

There is, however, one point we should like to be informed on, and that is your attitude toward "Uniform Cost Accounting" and its use by members of Trade Associations.

We refer to a standard plan or methods which may be developed and used by the producers of a certain line whereby they figure their costs by the same rules, including in them the same ele-

ments, and differing only in results because of the variance in size of plants, equipment and local conditions—uniform as to fundamentals.

Is there, in your opinion, any reason why such a system may not be developed and used lawfully by an industry? Again, if conversion costs only be dealt with, is there any legal bar to the collective study of costs by the members of an industry using such a Uniform Cost System?

We are deeply interested in the advancement of American business along Cost Accounting lines and will greatly appreciate your reaction on the two questions above propounded.

(Signed) E. W. McCullough,
Manager, Fabricated Production Department.

To this letter Acting Chairman Gaskill replied as follows:

Your letter of the 19th instant, inquiring as to the views of this Commission with respect to the development and use of uniform methods of cost accounting by trade associations, has been received and given careful consideration.

Your specific questions read as follows:

> There is, however, one point we should like to be informed on, and that is your attitude toward "*Uniform Cost Accounting*" and its use by members of trade associations.
>
> We refer to a standard plan or methods which may be developed and used by the producers of a certain line whereby they figure their costs by the same rules, including in them the same elements and differing only in results because of the variance in size of plants, equipment and local conditions,—uniform as to fundamentals.
>
> Is there, in your opinion, any reason why such a system may not be developed and used lawfully by an industry? Again, if conversion costs only be dealt with, is there any legal bar to the collective study of costs by the members of an industry using such a Uniform Cost System?

There has been much misunderstanding and unfortunately not a little misrepresentation of the attitude of this Commission on the subject of uniform methods of cost accounting. In fact it seems to be difficult to secure even for the most carefully worded statement a proper appreciation of the Commission's position, yet it is really very simple, namely, that it is strongly in favor of such work provided it is done scientifically and accurately and is not used for ulterior purposes in violation of the law.

No governmental agency in this country except possibly the Treasury Department has had so much occasion to observe the existing defects in cost accounting methods, but the Commission is glad to record its opinion that there has been on the whole a considerable improvement in recent years. The work of this Commission would be greatly facilitated by further improvement in cost accounting methods and also in fact by a greater uniformity in methods provided proper methods are chosen as the models.

There has been a good deal of indifference and ignorance shown by individual companies regarding the methods of ascertaining costs. Accurate cost finding in some cases, however, appears to involve an expense that some business men regard as greater than the benefits, while in some industries the technical or theoretical difficulties in getting accurate costs are no doubt very great.

As long as the principles of cost accounting are sound and the methods used are adapted to secure accuracy of individual results, and provided that the results are not used directly or indirectly for ulterior purposes of an illegal character, the Federal Trade Commission is in favor of the study and development of uniform cost accounting by trade associations, or otherwise.

There is evidently nothing illegal in such a practice, but it is always well to remember that though innocent in itself, it has sometimes been perverted to serve the ends of collusive price control, and, when it is so used, no matter whether directly or indirectly, then restraint of trade is involved.

The following letter was then sent to Acting Chairman Gaskill:

In acknowledging your favor of the 25th ultimo I am much gratified to note that it appears to me as supporting the effort we are making with Trade Associations to bring about scientific and accurate cost by members of such associations.

In one paragraph, however, you raise the question of the motives for the establishment of such a system, while in another you don't. To be specific, in paragraph three you say the Commission is strongly favorable, provided it is done scientifically and accurately and "is not used for ulterior motives in violation of law," while in paragraph six, you say, "as long as the principles of Cost Accounting are sound, etc., and provided the results are not used directly or indirectly for ulterior purposes."

These are not contradictory, if I understand what you meant. My interpretation is that for a Trade Association to proceed to set up and secure the use by its members of a scientific and accurate plan of cost accounting is not only legal and highly beneficial in your view, but the use of this legal and highly beneficial information by the members of the Trade Association or by the Association itself for purposes of price-fixing is condemned by the Commission.

Kindly advise me if I am right in my interpretation.

(Signed) E. W. McCullough.

In reply Mr. Gaskill said:

The sentences which you quote from our letter of the 25th do not seem to us to be contradictory.

Stated in another way, the conception of the Commission is that the efforts of a trade association to educate the individual member in the application of sound principles cost accounting in his individual business, are proper. But that any subsequent effort of the association to reduce the individual costs to an average or uniform cost basis and to procure the use of the group standard as a basis of price making by each of the individuals in the group, is improper. The individual must fix his own cost and his own margin. The group may not attempt to substitute a group average or standard either of cost or margin for the individual's figures without being in peril of becoming an unlawful combination.

Applying this statement to your interpretation of our letter of the 25th, it may be said that for a trade association to set up and induce the use by its members of a scientific and accurate plan of cost accounting is not only legal but highly beneficial to the individual members of the association. The use of this legal and highly beneficial information by each individual in establishing his own production cost and determining his own margin, is entirely proper. If thereafter the association attempts to induce its members to disregard their own varying figures and use a common average or uniform figure of cost or margin or both, it has departed from its proper position of instructor and may easily take on the appearance of a price fixing combination in restraint of trade or in suppression of competition.

How far the association can lawfully go in acting as the medium of exchange of cost data among its members can only be determined after the decision by the United States Supreme Court in the pending action against the American Column and Lumber Company et al, in which this question is involved.

In such an expression as this, nothing is "condemned" by the Commission. The Commission renders judgment only after the trial of an issue of fact upon a complaint, after hearing. Such letters as this are advisory only, suggestions and nothing more, written in the hope that they may be helpful.

Cordially yours,
(Signed) Nelson B. Gaskill.

The bulletin concludes with this statement:

This department has already made much progress in its efforts to develop within the several industries uniform cost accounting and has accumulated copies and information concerning as many as 70 such systems, and we cannot too strongly urge that the other trade lines not so supplied take immediate steps to develop such systems for the benefit of their members. Enlightened competition is most desirable, both from the standpoint of the producer and the consumer.

MOTOR STATISTICS

Dear Mr. Lee:

I was much interested in the review, published in your October issue, of "The Automobile Industry and Its Future" by Leonard P. Ayres of the Cleveland Trust Company. I was already familiar with this pamphlet of Mr. Ayres' before having read the review and had studied and analyzed the statistics and the conclusions drawn with a great deal of care. It is rather surprising to note the widespread interest in a pamphlet of this kind which on the very face of it failed to take cognizance of many of the fundamental factors involved in the subject.

Even a brief analysis of the subject would indicate the utter futility of attempting to predict the future of the automobile industry purely upon the basis of past statistical data. The growth of the automobile industry will depend, of course, partly upon the factors treated in Mr. Ayres' pamphlet but it will depend also upon many economic and human factors which are not considered in any way, shape or form.

The ability of automobile manufacturers to analyze markets, to properly merchandise their product and to carry on their merchandising in an efficient manner will have much to do with the future development of the industry. The economic development of our country will be a large factor in influencing the future growth of the automobile industry. The tendency of design and production within the automobile undustry will have a strong influence upon its development as will many factors of human psychology both within and without the industry itself.

In addition to his failure to recognize these fundamental facts, Mr. Ayres has failed even to properly analyze the inaccurate figures which are at his command. In discussing his subject, the registration and production figures which he uses include both cars and trucks. It is apparent

to anyone with any knowledge either of marketing or of the economic functions of motor vehicle transportation, that the passenger car and the truck are distinctly separate units and must be considered separately when discussing future sales and future development.

The future of the car and truck rests upon fundamentally different bases; their development will proceed along different lines and will be influenced by different economic forces. To consider gross motor vehicle figures as a basis of predicting future trends is to insert a fundamental error which will render inaccurate the reasoning and the conclusions drawn from them.

The automotive industry has become so much a part of industry and society as a whole in this country, its development is so closely bound up with a number of economic and psychological factors that no sound discussion of its future can neglect consideration of these factors. The very fact that they are intangible and difficult to evaluate simply emphasizes the futility of trying to get a mathematically correct answer to such a question.

There is a tremendous danger in statistical data that is not properly interpreted. Especially is this true when the statistics going to make up a study are basically as inaccurate as are those available concerning the various phases of the automotive industry. I am enclosing a copy of an article which appeared in *Automotive Industries* which discusses this matter in greater detail. I am sending this along with the thought that it may be of interest to you as pointing out certain factors in this very important question which are entirely neglected in the pamphlet which you reviewed. May I quote from the enclosed article a little saying that is especially true as regards the automobile industry at the present time: "Always be friendly with the little statistic but don't let it dominate you."

Yours very truly,
(Signed) Norman G. Shidle,
Managing Editor,
Automotive Industries.

Administration is always glad to open its columns—so far as space will permit—to those who hold different views. From the article mentioned in Mr. Shidle's letter the following is quoted to supplement the review published in *Administration* for October:

It is practically impossible to discuss intelligently the automobile industry and its future purely on the basis of statistical data, since such a discussion necessarily involves economic and psychological factors not reflected from statistical information. Moreover, the gross inaccuracy of the figures available renders such an attempt even more difficult.

Even when every effort is made to get the statistics as nearly correct as possible, and even when an attempt is made to allow for errors and inaccuracies, the variables involved in the present data are so great and the general economic factors affecting the discussion are so strong as to render misleading practically any survey based entirely upon statistical information.

Only very general indications and trends can be observed. From this standpoint present statistics are of value; but an attempt to make anything like mathematically accurate deductions is almost certain to be misleading.

The real need of the automotive industry is more accurate statistical data compiled upon sound economic basis. Every effort should be exerted to encourage the more extensive gathering of such data and to outline the proper fundamentals upon which it should be assembled. It is worth while to discuss more in detail the specific inaccuracies and difficulties which present themselves.

The confused state of the registration figures even at the present time precludes the possibilities of a very high degree of accuracy. The farther back the calculations are carried the more inaccurate these figures become. It is possible to build up a theoretical registration on the basis of past production figures and the life of a car, but such data are of little value since it has thus far been impossible to determine with any degree of accuracy the life of a car. The only way this life can be calculated is on the basis of registration figures. Thus the circle of inaccuracies is completed.

The necessity for considering separately the passenger car and the truck when discussing future makes and trends, moreover, has not been sufficiently recognized.

The future of the car and the truck rests upon fundamentally different bases. Their development will proceed along different lines and will be caused by different economic forces. To consider gross registration or production figures of motor vehicles as a basis for predicting future trends is to insert a fundamental error which

will render inaccurate the reasoning and conclusions drawn from them.

For the same reasons segregated registration figures are necessary. General conclusions and prophesies cannot be made from registration figures alone unless the details of gathering and compiling those figures are understood. And when these factors are studied it becomes evident that sufficient data for an intelligent analysis on the basis of statistical data are simply not there.

Many states do not yet segregate car and truck registrations at all. This fact alone makes even approximate accuracy nearly impossible. But further analysis of registration methods shows the following vagaries in connection with this matter of segregating car and truck registrations.

Some states register tractors with trucks and do not register trailers; others register trailers with trucks and do not register tractors; others register both tractors and trailers with trucks; still others register neither tractors nor trailers in any way. All these factors enter into a consideration of the registration figures even in those states where segregation between cars and trucks is apparently made.

All these difficulties render dangerous any attempt at general predictions on the basis of statistical data alone. Even an intelligent effort to get results from such material is likely to go astray far enough to render the conclusions drawn unsound as a basis for commercial plans.

Take the matter of estimating the replacement market which has been attempted by numerous persons. Some general idea as to this market can and should be determined by every manufacturer and parts maker. But to base detailed plans on such an estimate may lead to very bad results.

A banker, for instance, who has studied the statistics of the industry very carefully and who has honestly attempted to interpret accurately the many variables, estimates the replacement market in the near future at 1,500,000 cars. Another executive closely connected with the industry who has made a similar close study of the situation estimates it at 1,800,000. This is a variation of 300,000 cars. Estimating the average car value at $1,000 this means that there is a difference of $300,000,000 in the possible sums to be derived from replacement sales according to which of the estimates is accepted.

This illustrates vividly the danger of attempting to make detailed plans or to derive specific conclusions purely on the basis of available statistics. The variation shown in these two estimates, both carefully made, is not at all surprising to anyone who has studied the sources and the methods of compilation of the various sets of figures involved in the calculations.

The government export figures furnish another basic set of statistics for compilations of this kind. The deficiencies of these figures during recent years are common knowledge throughout the industry. So here again enters inaccuracy and variables. In this connection, however, it should be noted that a marked improvement in this particular statistical field can probably be expected at once, since definite efforts to render these export figures more accurate and more valuable are already under way by the Department of Commerce.

The automotive industry has become so much a part of industry and society as a whole in this country, its development is so closely bound up with a number of economic and psychological factors that no sound discussion of its future can neglect consideration of these factors. The very fact that they are intangible and difficult to evaluate simply emphasizes the futility of trying to get a mathematically correct answer to such a question.

CORPORATION CONTROL

An article in the October issue of *The Savings Banks Monthly Journal* points out the need of more co-operation between the railroad executives and the railroad security owners. It has been recently ascertained that the number of persons owning either directly or indirectly railroad securities exceeds the number of railroad employees. Yet, the interests of the employees have been protected not only by the labor organizations, but also by specific congressional legislation, whereas the security-holders have had their properties sequestered; profits of their companies impaired; and the equities back of their investments reduced, with no public sympathy and with very little legal protection.

The wide distribution of corporation ownership among thousands and thousands of individuals and institutions has naturally resulted in a sort of "absenteeism" control. In this control the great majority of security-holders who have furnished the bulk of capital—the owners of railroad and industrial bonds—have practically no voice. Similarly, the stockholders, who theoretically, at least, are proprietors of corporations—as distinguished from the bondholders having the legal status of "creditors"—exercise as a class very little administrative control. The vote at the annual

meeting of the corporation is about the only privilege a stockholder has in personally participating in management. Yet, how many stockholders of large companies attend an annual meeting? The Pennsylvania Railroad has more than 100,000 stockholders, the Union Pacific, New York Central, Baltimore and Ohio, and other companies have their capital shares equally widely distributed. With this situation effective control of security-holders as unorganized groups is out of the question.

As a result of the impossibility of holding genuine shareholders' meetings, proxy voting has developed. This is probably the best practical substitute for actual participation in administrative control.

The difficulty, under present arrangements, is that those exercising corporate management usually have the greatest advantage in obtaining proxies. In order to protect the security-holders' interests, therefore, it is essential to have some organization through which dissatisfied stockholders may act without involving them in inordinate expense and trouble. Such organizations exist in many of the large continental corporations. Thus, in Germany, France, and, to a slight extent, in Great Britain, large corporations have a council of control as well as a board of directors. The council has supervisory and auditing powers and makes its reports directly to security-holders.

RETAIL FOOD PRICES

The United States Department of Labor through the Bureau of Labor Statistics, has completed the compilations showing changes in the retail cost of food in 10 principal cities of the United States.

During the month from August 15, to September 15, 1921, there was a decrease in all but three of these cities. In Los Angeles there was an increase of 2 per cent; in Newark an increase of two-tenths of 1 per cent, and in Memphis an increase of one-tenth of 1 per cent. In Boston, there was a decrease of 3 per cent. In Cleveland and Detroit, there was a decrease of 2 per cent; in Columbus, Indianapolis, and Houston a decrease of 1 per cent; and in Jacksonville, a decrease of one-tenth of 1 per cent.

For the year period, September 15, 1920, to September 15, 1921, there was a decrease of 29 per cent in Memphis; 27 per cent in Cleveland; 26 per cent in Detroit; 25 per cent in Indianapolis; 24 per cent in Boston, Houston, Los Angeles, and Newark; 23 per cent in Columbus; and 22 per cent in Jacksonville.

As compared with the average cost in the year 1913, the retail cost of food on September 15, 1921, showed an increase of 59 per cent in Boston and Detroit; 51 per cent in Cleveland; 50 per cent in Indianapolis and Newark; 49 per cent in Jacksonville; 45 per cent in Memphis; and 42 per cent in Los Angeles. Prices were not obtained from Columbus and Houston in 1913, hence no comparison for the 8-year period can be given for those cities.

THE UNEMPLOYMENT CONFERENCE

The National Unemployment Conference called by the President to meet in Washington closed its sessions October 13 after a series of active discussions of topics pertaining directly or indirectly to the present industrial idleness.

One of the factors in the success of the conference in coming to definite conclusions was the separation of the remedies which are of an immediate or emergency nature from those clearly of a more permanent character. The providing of work and relief to tide over the unemployed during the coming winter was the first matter to receive attention.

The conference found that there are between 3½ and 5½ million persons unemployed and while there has been an improvement the crisis in unemployment cannot be met without a definite and positive organization of the country for that purpose. It is the belief that the problem of meeting the emergency of unemployment is primarily a community problem, in which the mayor should lead.

The conference recommended:

> The basis of organization should be an Emergency Committee representing the various elements in the community. This committee should develop and carry through a community plan for meeting the emergency, using existing

agencies and local groups as far as practicable. One immediate step should be to co-ordinate and establish efficient public employment agencies and to register all those desiring work. It should co-ordinate the work of the various charitable institutions. Registration for relief should be entirely separate from that for employment.

The personnel of the employment agencies should be selected with consideration to fitness only and should be directed to find the right job for the right man and should actively canvass and organize the community for opportunities for employment. The registry for employment should be surrounded with safeguards and should give priority in employment to residents. Employers should give preference to the emergency employment agencies.

The emergency committee should regularly publish the numbers dependent upon them for employment and relief that the community may be apprised of its responsibility. Begging and unco-ordinated solicitation of funds should be prevented.

Private houses, hotels, offices, etc., can contribute to the situation by doing their repairs, cleaning, and alterations during the winter instead of waiting until spring, when employment will be more plentiful.

Public construction is better than relief. The municipalities should expand their school, street, sewage, repair work, and public buildings to the fullest possible volume compatible with the existing circumstances. That existing circumstances are favorable is indicated by the fact that over $700,000,000 of municipal bonds, the largest amount in history, have been sold in 1921. Of these, $106,000,000 were sold by 333 municipalities in August. Municipalities should give short time employment the same as the governor should unite all state agencies for support of the mayors and, as the superior officer, should insist upon the responsibility of city officials; should do everything compatible with circumstances in expedition of construction of roads, state buildings, etc.

The federal authorities, including the federal reserve banks, should expedite the construction of public buildings and public works covered by existing appropriations.

A congressional appropriation for roads, together with state appropriations amounting to many tens of millions of dollars already made in expectation of and dependence on federal aid, would make available a large amount of employment.

The greatest area for immediate relief of unemployment was found to be in the construction industry, which has been artificially restricted during and since the war. Not only is there a need for more than a million homes but all kinds of building and construction are far behind national necessity.

There is still a need of community action in provision of capital on terms that will encourage home building. Where the costs are still above the other economic levels of the community there should be searching inquiry and action in the situation. It was recommended that the governors summon representative committees, with the co-operation of the mayors or otherwise as they may determine, to (a) determine facts; (b) to organize community action in securing adjustments in cost, including removal of freight discriminations, and clean-cut campaigns against combinations, restrictions of effort, and unsound practices where they exist to the end that building may be fully resumed.

The resolution of the committee on emergency measures by manufacturers, adopted by the Conference unanimously, was as follows:

Manufacturers can contribute to relieve the present acute unemployment situation by:

(a) Part-time work, through reduced time or rotation of jobs.

(b) As far as possible, manufacturing for stock.

(c) Taking advantage of the present opportunity to do as much plant construction, repairs, and cleaning up as is possible, with the consequent transfer of many employees to other than their regular work.

(d) Reduction of the number of hours of labor per day.

(e) The reduction of the work week to a lower number of days during the present period of industrial depression.

(f) That employees and employers co-operate in putting these recommendations into effect.

A large number of employers have already, in whole or in part, inaugurated the recommendations herein set forth, and for this they are to be commended, and it is earnestly urged upon those employers who have not done so to put same into use, wherever practicable, at the earliest possible opportunity.

(g) Specific methods for solution of our economic problems will be effective only in so far as they are applied in a spirit of patriotic patience on the part of all our people.

During the period of drastic economic readjustment, through which we are now passing, the continued efforts of anyone to profit beyond the

requirements of safe business practice or economic consistency should be condemned. One of the important obstacles to a resumption of normal business activity will be removed as prices reach replacement values in terms of efficient producing and distributing cost plus reasonable profit.

A movement was started to urge all manufacturers and wholesalers who may not yet have adopted this policy to do so.

When these principles have been recognized and the recommendations complied with, confidence was expressed that the public would increase its purchases, thereby increasing the operations of the mills, factories, and transportation companies, and consequently reducing the number of unemployed.

The general recommendations for permanent measures, adopted by the Conference Oct. 11, were as follows:

1. Readjustment of railway rates to a fairer basis of the relative value of commodities, with special consideration of the rates upon primary commodities, at the same time safeguarding the financial stability of the railways.

2. Speedy completion of the tax bill with its contemplated reduction of taxes, in order that business now held back pending definite determination may proceed.

3. Definite settlement of tariff legislation in order that business may determine its future conduct and policies.

4. Settlement of the financial relationships between the government and the railways, having in mind the immediate necessity for increased maintenance and betterments, making effective increased railway employment and stimulation of general employment, in order that the railways may be prepared for enlarged business as it comes.

5. Limitation of world armament and consequent increase of tranquillity and further decrease of the tax burden not only of the United States but of other countries.

6. Steps looking to the minimizing of fluctuations in exchange, because recovery from the great slump in exports (due to the economic situation in Europe) can not make substantial progress so long as extravagant daily fluctuations continue in foreign exchange, for no merchant can determine the delivery cost of any international shipment.

7. Definite programs of action that will lead to elimination of waste and more regular employment in seasonal and intermittent industries, notably in the coal industry, in order that the drain upon capital may be lessened and the annual income of workers may be increased.

The conference appears to have been remarkably successful in agreeing upon definite measures for both emergency and permanent improvement of unemployment conditions and in avoiding the controversies which wrecked the previous industrial conferences. The carrying out of the recommendations is the task of the various communities, states, and the federal government, and of manufacturers, builders, and railways who employ a much greater body of wage-earners than all governmental bodies together.

Acting in accordance with requests to employers of labor throughout the United States by the unemployment conference at Washington, the United States Steel Corporation has announced that it will expend "up to $10,000,000" for extension of the plants of its subsidiary companies, to provide jobs for former employees now out of work.

The decision to put dollars and men to work was made by the finance commission of the corporation, and embodied in a resolution requesting the associated companies to proceed with the proposed work as promptly as circumstances will permit. The resolution is as follows:

That our subsidiary companies be requested to proceed as promptly as circumstances will permit, to expend up to $10,000,000 in the extension of their manufacturing plants, the same to be done under the immediate direction of the chairman and president of the corporation, with the understanding that so far as practicable the extensions be made where the services of their own employes, now idle in consequence of diminished operations can be utilized, and where costs will be fair and reasonable.

ADMINISTRATION

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LAND ECONOMICS AND BUSINESS EXECUTIVES

BY RICHARD T. ELY*

ONE of our human weaknesses is our failure to see the most obvious things. This is illustrated in many familiar puzzling questions. "How do you suppose Jones spelled 'right'?" The one to whom the question is addressed will give all sorts of answers and be told every time, "No." Then, when he asks, "Well how did he spell it?" the reply is, "R-i-g-h-t. He spelled it right."

Astronomy as a science had a very early beginning. It was concerned with things remote and awe-inspiring that impressed themselves upon the imagination. On the other hand, economics, dealing with social phenomena arising out of man's effort to gain a livelihood, came into existence as a distinct branch of knowledge very late in human history and is just about as old as our American nation. There are many reasons for this; one is that it deals with things near and familiar and long considered unworthy of the attention of great minds.

The Bible, the source of so much practical wisdom, affords an illustration of the trait of human nature of which we have spoken. When Elisha sent word to the mighty Naaman, afflicted with leprosy, "Go wash in the Jordan seven times and thy flesh shall come again to thee, and thou shalt be clean," Naaman was wroth. Jordan was too near and easy, and he went away in a rage.

Just as we have come late in our history to economics, we have come still later to land economics as a distinct branch of that science. In fact, land economics is as yet scarcely born. We have many works on railways, which could be called railway economics; we have books on insurance, or insurance economics; but to this day we have no book on land economics, although one is nearly ready for publication. Our economic treatises give us vague general statements about land, but they lead us nowhere.

II

It is my belief that at the present moment it would be difficult to name any branch of knowledge, considered either as science or art, of more vital significance to the business man and, indeed, to the entire business world than land economics. It is my purpose in this article to try to "put across"

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this idea. It is not an easy thing to do. To me it seems like a-b-c, but this is because I have so long concerned myself with this subject. My experience shows that the business man, for example, the commercial banker, has to think a long time on the subject before he sees that in land economics we are dealing with problems of such vital concern to him that his success or failure depends on the way in which they are handled. The first thing he is apt to think of is agriculture, and yet, land economics is something very distinct from agricultural economics, and has just the same sort of connection with it as with mining economics or economics of forestry.

When Hon. E. T. Meredith was for a brief time Secretary of Agriculture, he rendered such a great service to his country that he must stand conspicuous among all our Secretaries of Agriculture. To use a term which is very effective, even if not the most approved English, he "sold" the Department of Agriculture to the business world. When somebody rises with the gift to sell land economics to the business man, he will perform an equally great service.

It is now necessary to give some attention to definitions and to somewhat abstract discussions, and possibly I should hesitate to do this had not my previous article in *Administration* on "Luck and Chance in Success and Failure"[1] been so well received by business men. That article involved abstract reasons about some difficult and perplexing economic ideas, but found an encouraging welcome from readers of *Administration*.

First of all we must turn our attention to the concept or idea of land, and the land concept is a very complex one. Land has generally been treated as if it were one thing, a unit, and a thing producing an income of a peculiar character. But when we recall that land as used by economists means the forces of nature, so far as they have economic significance, it seems a little absurd to regard them all as belonging to one single economic category or class. How diverse are the forces of nature! About all these forces taken as a whole what can we say that has much scientific or practical value? To be sure, some things of real value can be said; but we cannot get very far scientifically or practically so long as we regard land as an undifferentiated whole.

We can test this statement by calling to mind some of the popular discussions in regard to land. Public *versus* private ownership is much debated. But it is ridiculous, from any point of view, to say of land as a whole that it should be publicly owned or that it should be privately owned. We must first know of what kind of land we are speaking. Practically all agree that our city streets and rural highways should, in general, be publicly owned, and also that privately owned toll roads are an anachronism.

Experts are generally agreed that forests should be very largely owned by some public body—nation, state, or local political unit—although an important place is also found for private ownership. But with reference to the great bodies of water, covering more than half of the earth's surface, the nations of the world reject the idea of either public or private ownership and stand for the idea that the seas are free, common goods, like the air we breathe.

On the other hand, the experience of the world and the nature of the case speak so overwhelmingly for private ownership of purely agricultural land that even the Bolshevists of Russia, the most extreme of Socialists, have

[1] See *Administration* for May, 1921, page 577.

not been able, in the case of agricultural land, to carry through their idea of public ownership, but rather have strengthened private property in farm land by dispossessing the old landlords in behalf of the peasants.

Another statement that we hear is, that the land should be brought into use, and it is proposed by some to tax land even to the point of confiscation, in order to bring it into use. Yet when we come down out of the clouds to solid earth, we find that some kinds of land are being brought into use too rapidly, and that with respect at least to one kind of land, namely, privately owned forest land, experts are in general agreement that the taxation in the United States is too heavy and should be very greatly lightened in order to bring about a more gradual and wiser use of the land. The reader can find many illustrations showing that one of the first steps in any scientific or practical treatment of the land is land classification.

III

Many sciences and arts deal with land; for example, geology and agriculture, and in certain aspects, engineering, landscape gardening, and even architecture. What is it that marks out a field for land economics? It is the concept *property*. It is this concept more than any other feature that distinguishes economic inquiries concerning the land from other sciences and arts dealing with land. It separates, for example, a field of economics from purely agricultural inquiries when we deal with agricultural land.

Let us, then, clearly grasp the *property-idea* as distinctive in our work, giving us *property-relations*—a term with which we should become familiar. Economics, in general, is a science of human relationships, and so is land economics as one of the major divisions of economics. This becomes clear if we consider the topics with which we deal in land economics. To mention only a few: tenancy in city and country, price of land, single tax, public ownership, community ownership, the open range, large landholdings, the congestion of urban population.

We are now prepared to proceed to definitions, and we offer the following as a broad general definition of land economics: *Land Economics is that division of division of economics, theoretical and applied, which is concerned with the land as an economic concept and with the economic relations which grow out of land as property.*

The older economists distinguished frequently between science and art. This distinction, which has generally fallen into disuse, may be helpful in giving us a fuller idea of the proper scope of land economics: *As science, land economics seeks the truth for its own sake. It aims to understand present facts pertaining to land ownership in all their human relationships, to explain their development in the past, and to discover present tendencies of growth. As an art, it aims to frame constructive land policies for particular places and times.*

What do we mean by land policy? A land policy means definite aims and the adoption of appropriate means for attaining these aims. It signifies a departure from an excessive individualism and an abandonment of the idea that each one in merely following out his own interests will promote adequately the interests of society. The purpose of a land policy is to bring about a situation such that the user of land, while in the main pursuing his own ends, will at the same time act in general harmony with the interests of society as a whole. Social planning is implied in a land

policy, and this planning must go far beyond what we understand by city planning. The plan must not merely be extended to include rural land, but it must be more profound in its aims than city planning ordinarily is.

A land policy takes as a starting point the existing situation with respect to the land, land as here used being equivalent to all the natural resources of the country. It examines the processes of evolution by which the existing situation has been reached and proceeds to develop a conscious program of social control with respect to the acquisition, ownership, conservation and uses of the land of the country and also with respect to the human relations arising out of use and ownership.

A land policy, then, involves among other things, a discussion of the inheritance of landed property and the use of credit in the purchase of land. It includes all those social agencies, private and public, which have to do with the land, for example, land mortgage companies and the federal land banks. A land policy includes regulation, actual or contemplated, of the ownership and use of the mineral resources, of water-power, of land transfer, and many other things which upon reflection will occur to the careful reader. Social control by a land policy embraces, then, the relations among men arising from the economic and social aspects of land. The degree of control varies, but becomes more intensive as time goes on and that with an ever-increasing emphasis upon social welfare. It should be understood, however, that social control is not always governmental or public in nature. Social control proceeds from private or non-governmental agencies and from public opinion, as well as from agencies of a governmental sort.

While we frame land policies for particular times and places, there are nevertheless common features in all land policies, and these are due to physical likenesses of human beings and to the fundamental characteristics that are common to them all. We all live on the earth, we must all be clothed, and we all need shelter. Moreover, our resemblances increase as time goes on, as economic evolution proceeds, and as men come into closer and closer relationships with one another.

Consequently, one nation has much to learn from another, one state from another; and we might possibly give some broad outlines of world land policy if we make allowances for different stages of evolution and racial resemblances and differences. Thus, we may discuss the world food supply with reference to land policies. In the case of certain staples we have growing internationalism of markets, which are rapidly becoming world markets; and when we have a real world league or association of nations (we are not here concerned with terms or political forms) it must concern itself in greater or less degree with world land policies. The very minimum in world land policies necessary to preserve international peace is such a regulation of the food supply and of raw materials for manufactures that all nations may have the means of subsistence and the materials of industry; for otherwise many older and densely populated countries must remain dependent for life itself either upon the whim, caprice, self-interest, or good-will of other peoples, or upon the old "balance of power" and that development of military force which will afford protection.

IV

Specifically, how is the business man concerned with land economics?

First of all, he is concerned as a citizen. Land economics is concerned with property in land and the relations which grow out of property in land. We are dealing, then, with the foundations of the social order and with the fundamental conditions of prosperity. Our constitutional liberties have grown up on the basis of private property in land. On the other hand, private property in land has many enemies, and it is being attacked, now openly, now insidiously in various disguises.

Now and here it is simply necessary to emphasize the fact that in dealing with questions of property in land we are dealing with the foundations of prosperity. Wrong methods will surely bring disaster, while right methods will contribute to further progress.

Professor Frank A. Fetter, of Princeton University, has stated the significance of land economics in the following forceful words:

> My own conviction has long been that the land question far transcends any restricted field of economics and that it is fundamental to national survival and national welfare. It is truly a problem calling for statesmanship of the broadest type.

To what Professor Fetter has said, we may add the following words from the late James J. Hill:

> Land without population is a wilderness and population without land is a mob. The United States has many social, political, and economic questions—some old, some new—to settle in the near future; but none so fundamental as the true relation of the land to the national life.

In the next place, turning to less general considerations and more specific problems of business, it is to be noticed that land is the basis, directly or indirectly, of a large part of modern credit, and to the business man credit is life itself. The full force of what is said may not at once be apparent. The reader, however, should clearly grasp the undoubted fact that prices of agricultural products in the long run are largely determined by our land policies. This was suggested but probably not sufficiently emphasized in my previous contribution on "Luck and Chance," to which reference has already been made in this article. The amount of new land that is being brought into use all over the world is conditioned by the land policies of various countries. If the opening up of new land is artificially and unduly stimulated, we have a disproportionate production in agriculture; we have low prices of many agricultural products, especially the great staples; we have falling agricultural prices slowly but gradually reflected in falling land values. What then happens, we are now experiencing.

If it is said that we do not produce more than the world needs, the statement is unquestionably true; but we have to concern ourselves not with mere needs, but with needs coupled with purchasing power, and land economics is concerned with both.

Dr. B. M. Anderson, the economist of the Chase National Bank, has in his book "The Value of Money," some interesting observations on the relation between land values and international gold movements. Incidentally, he calls attention to the fact that "destroying land values would lessen the security which the community can offer outside lenders." This wise observation suggests an important train of reasoning and brings us to the problem of the taxation of land. Land values may be destroyed by taxation and, other things being equal, every change in taxation results in a proportional change in land values. Declining land values mean depression, while stable and slightly increasing

land values help credit wonderfully.

May I give an illustration from my own home city? Land values have, on the whole, been in the favorable condition just mentioned, namely, stable and slightly increasing. It has been very easy to borrow money with land as security, and it is my firm belief that this situation has had something to do with the fact that for nearly half a century no bank failure has been known in Madison, Wisconsin.

Let us suppose a policy followed that has received some support—a policy proposed strangely enough by a business man of some note, namely, the late Dr. C. B. Fillebrown. His proposal was that we should gradually absorb the rent of land, which means, of course, the value of land, completing the process in 30 years. What would be the necessary attitude of the banker or other lender of money when offered the security afforded by surely and slowly declining land values with their extinction at the end of 30 years, a period short in the life of the community?

V

Let us take the subject of irrigation. Land economics views irrigation primarily from the point of view of property in water. Irrigation, unfortunately, has been mainly treated from the point of view of engineering. Now the engineering problems, difficult as they may be in some cases, are quite capable of solution and may afford no insuperable difficulties; but unless the question of property in water is satisfactorily solved, the owner of the irrigated farm may lose his all. This has been precisely the difficulty in our irrigated sections, where litigation and strife have been too common, and where even bloodshed and loss of life are not altogether unknown. But irrigation suggests irrigation bonds. The market for them is demoralized because questions belonging to land economics have not been solved. Investors have lost heavily and the progress of agriculture in the arid and semiarid sections of the country has been impeded.

The housing problem is now an acute problem in many parts of the United States and in most European countries. Progress in solving this problem is not satisfactory, and many proposed and even attempted solutions are making a bad matter worse. It seems strange that this problem should have been discussed so superficially and without a thorough comprehension of the problems of property involved. For agricultural land we have some splendid studies of a monographic nature made by the United States Department of Agriculture, by our agricultural colleges, by our state departments of agriculture, and by some other agencies. We know something about tenancy, the extent to which it prevails and the movement from tenancy to ownership of agricultural land. Who can tell us anything about the extent of tenancy in cities and the movement from tenancy to home ownership? What impartial studies have we, that by any possibility could be called scientific, dealing with the returns to investment on urban land? What are the necessary returns if private individuals are to furnish the homes needed, building either for their own use or as an investment on which rents are to make a return? What about this agitation in regard to rent profiteering? Who can tell us calmly and impartially what, on the whole, are the results thus far attained by rent legislation and rent regulation by public authority? Is it true that landlords deserve to be

a despised class? How generally are they entitled to be called "rent hogs?" What is the effect upon housing construction of this contemptuous treatment of landlords? Does the appellation "rent hog" point to large return and thus induce men to build houses and for the sake of the large gain put up with the scorn involved? Do we find that those who indulge in epithets of this kind and who rend the air with complaints against oppression by landlords show an inclination to invest their own money in furnishing needed homes?

What if private effort is inadequate in present conditions? Can it be made adequate by tax exemption? If buildings are tax exempt what effect is this going to have upon land values? If tax exemption affects land values adversely, will it take away the security for loans that makes possible the construction of needed buildings? As a matter of fact, at the present time it is the lure of private property which leads to most of the building that is going on. How is this going to be affected by the exemption of buildings and higher taxes on the land itself? These questions are not answered. They are asked to show the significance of the problems which we must discuss in land economics.

VI

Let me now turn to a somewhat different line of argument. I want to discuss remedies for the present agricultural distress.

Sir Horace Plunkett has given us as a slogan the three B's, namely, better farming, better business, better living. The three B's are very good, so far as they go. I want to supplement the three B's by three G's.

The three G's that I propose are good farming by good men on good land. As a solution of our problems of agricultural prosperity the slogan of the three G's is very simple. It suggests Columbus and his egg in that this simple solution of our troubles is one far removed from popular thought.

There are many who want to make the farmer prosperous by price regulation, and they want high prices. Not long ago a slogan was "Three dollars a bushel for wheat," and the farmers were urged to hold their wheat for this impossible price. Is it not obvious, however, after a little reflection, that whatever the price fixed might be, there would always be some producing at a loss, because they would be producing on poor land or, as the economist calls it, submarginal land? If the price of wheat were five dollars a bushel, many farmers would still be producing at a loss, while multitudes of city workers would be impoverished. One of the chief difficulties at the present time in all parts of the United States is that men are attempting to cultivate submarginal land. Necessarily they are in distress. Only about half the land of the United States is suitable for agricultural products. One of the fundamental problems is to get the poor land out of use. Let us, however, express ourselves a little more accurately. The great problem in land utilization is to put all the land to the very best possible use, and this means taking more than half the land of the country out of agricultural use. A large part of it should be state-owned and used for the growth of trees. In other words, it should become forest land.

Another difficulty is that we have so many poor farmers. There are men who, from the point of view of farming, are not good men, and on account of their incompetence they are producing at a loss. Every effort

should be made to eliminate this evil. Some of the men who are not good farmers might be marginal or supermarginal men in other occupations; some of them who are now incompetent farm managers of their own farms might be good men as farm laborers. On the other hand, our agricultural schools and colleges are contributing powerfully to make the men engaged in agriculture good men in the economic sense. We can get the poor land out of use. It can be bought up by city, state, or nation. All this is physically possible. We cannot, however, eliminate the incompetent, even with the best we can do. Public sentiment will no more tolerate chloroforming them than it will tolerate chloroforming all the men when they reach the age of 60 years. Certain inferior groups of men constitute a load to be carried by society, but we must do our best, for the sake of all concerned, to reduce this to a minimum.

The progress in agriculture or, in other words, in good farming, is tremendous, and we owe a great deal of gratitude to those who have promoted the United States Department of Agriculture and our agricultural colleges, as well as other agencies which are bringing about a marvelous improvement in farming. Now, when we get good farming, with good men on good land, we have brought about a harmony of interests between city and country; and this is the only possible long-time policy for the farmer. It must be perfectly obvious that the question of expediency, altogether apart from all ethical questions, prevents the farmers from arraying themselves against the cities. When we have good farming by good men on good land, the farmer is prosperous and agricultural products sell at the lowest price consistent with general prosperity.

I feel that I should not close this paper before I strongly emphasize the importance of taking hold of the problems of land economics in the immediate future, and giving them most earnest and serious attention before they become matters of partisan politics, as they have in some parts of the world and to some extent, indeed, in parts of our own country. In general, it may be said that we in the United States are still able to approach all these problems with open minds, but this is not the case everywhere, and particularly is it not the case in England. Land problems there have reached the stage of urgency, but they have become so involved in politics, that it is doubly hard to deal with them satisfactorily. Whatever an Englishman suggests to help forward a solution of some English land problem is at once under suspicion, because it is supposed he has some political aim, though he may be perfectly honest and sincere.

I am aware that I have done scarcely more than open up this field. Some of us have formed the Institute for Research in Land Economics, in order to help solve the problems that in this article have been only suggested, and others which, on account of the limitation of space, it has been impossible even to mention. This is the only research institution in this field, and it is as purely public in its character as any great university, Harvard, Yale, or Wisconsin, for example.

As I close, I wonder to what extent I have succeeded in "putting across" the idea that land economics is of fundamental, vital importance to the business man. If I have succeeded, even measurably, possibly the editor of *Administration* will in some future issue allow me to write on some specific and definite problems in the field of land economics.

MAINTAINING THE SALES MORALE

BY RALPH BARSTOW *

WHEN the A.E.F. not only recognized the need for morale, but took a good many expensive and complicated steps to maintain a high morale in the army, we saw the first general public recognition the world has ever seen of the value of intangibles.

Until very recently it has been fashionable to relegate all consideration of the spiritual and sentimental aspects of life to the field of the impractical and ridiculous.

Sales managers, however, have known for years that one of their chiefest functions was the maintenance of a high morale among the men in their sales organizations.

In plain, ordinary, common times, this need has been great. Judge, then, how tremendous it is in 1921 with the background of the soft five years that has made every man flabby in his moral fiber.

No one but the man who has "pounded the pavements," who has traveled from pillar to post, endured the discomforts of the road, so clearly described by Edna Ferber in her "Roast-Beef Medium," no one who has not interviewed irritable, gloomy, captious, frightened, egotistical, and hostile buyers day after day, realizes that within every salesman there must be a deep well of self-confidence and self-esteem from which he can draw liberally to counteract the breaks made by his daily experience.

The very nature of the life is that of battle, with the salesman carrying the entire burden of providing the good cheer and friendliness; and the buyer having to be reserved, conservative, suspicious as a matter of self-protection in the opening stages of the negotiations. The salesman is always the pleader, and the buyer the Lord of High Decision.

Every salesman of any length of experience has an automatic morale manufacturer within himself. He must, or he will be reduced to despair and fear ere he has completed his first day's work, and some few salesmen have developed this "morale gland" to such an extent that they need no home office support. In fact, when they are off the job they are nearly intolerable because of their overweening confidence. This does not apply, though, to a very large percentage of salesmen. Most of them are normal people, very much like you and me. Dr. Johnson's classic on "The First 100 Men Going Up Fleet Street" would apply to salesmen as it did to Parliamentarians.

These men, then, rarely have sufficient powers within themselves of recuperation to counterbalance the drains made on them day by day in normal times, and with a year like this one when extraordinary demands have been made on salesmen and extraordinary conditions have existed in their trade, the home office that has realized the need for additional moral support has truly discharged its executive function, and those that have not have fared as badly as their salesmen must have fared.

The salesman has a right to look to his home office for moral as well as physical sustenance. It is under-

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stood that he is controlled from that point; his policies, promises, and practices are derived from thence and although he may not make a definite demand for moral support, yet subconsciously he craves it.

What, then, must the sales manager know in order to offer actual encouragement to his salesmen? We have seen the value of the whip-cracking theory, and you can consult any salesman of your acquaintance as to his opinion of what he contemptuously calls "bull." He is quick to catch insincerity, superficiality, and indifference in the communications sent to him and quicker still to resent them.

II

A sales manager has a solemn duty to know the life of the men he is guiding. He must have traveled himself; he must have called on the trade in no de luxe fashion, but simply and humbly, as any one of his men, for there can be no understanding in this world without experience; and your sales manager should never permit himself to forget his experience. In a word, sympathy must be the keynote of his control and sympathy is only gained by sharing, or having shared, the same load.

Next, the sales manager must know the trade. My own advice is to call alone on your customers. If you call with your salesman you face one of two possible situations. Either the salesman, because of his desire to make it easy and pleasant for you, chooses only those places for you to call where it is safe and harmonious, or, if he be the least bit mischievous he will pick out the toughest nuts in his territory, with a twinkle in his eye, and cast you adrift, knowing that if you do not succeed he can always say, "Well, the boss didn't make the grade—how can he expect me to?"

For these two reasons I believe it is best to call on the trade unattended, catch as catch can, taking the good with the bad, and standing on your own feet. You will then meet buyers in their accustomed frame of mind. They will treat you, perhaps, with a little more consideration because you are an executive from the home office, but they will not hesitate to put up to you their complaints and objections. Furthermore, by going alone you can, even without directly asking, discover the impression that your representative is making, whereas if you have your salesman along with you this subject is discreetly avoided. You can find out with whom your salesman is strong, and in what features, and wherein he is weak. But you surely must know the trade in order to talk to your salesman.

It is idle to write him what to do in Pittsburgh unless you have been to Pittsburgh and know the people there, for a long-distance control is like an absentee ownership.

In these days it is absolutely the duty of the sales manager to know business conditions the world over. He must have his fingers on the situation. If Iowa has a tremendous corn crop which it cannot sell at a price that will cover its cost to produce, he should know it. If oil has been discovered in Russton, Louisiana, he should know it. If cotton is selling for twice what it did three weeks ago, he should know it. If Australia suddenly places an import duty on his line, he should know it.

It always reminds me of the story of the small boy with the trick dog. The lad was putting the dog through his paces before an admiring audience and a man in the crowd said, "How much do you want for the dog?" "Five dollars," the youngster replied.

The deal was made. Next day the man returned with the dog on a leader and said to the boy, "You swindled me. The dog can't do any tricks." "Let me take that leader," said the lad, and promptly put the dog through his repertoire of stunts. Handing the leader back to the man, the kid remarked, "You've got to know more than the dog, Mister."

Salesmen expect you to know more than they do, and why shouldn't you? Think of your sources of information.

Think of your position, where you can view circumstances everywhere. The salesman is battling at one point at a time, like the soldier who knows what is taking place for about thirty feet each side of him, but does not know how the battle is going.

III

When Pueblo was flooded, we immediately notified our salesmen to make a special drive on pipe tools which would be urgently needed for restoring the sanitary arrangements of the wrecked city. When a big industrial city in the East suddenly starts going and puts its men back to work, we notify our salesmen to see that their distributors in that section are properly supplied with certain machine screw taps, which we know will be needed.

The sales manager must know his line in a way to make it perpetually interesting and attractive to his salesmen. He has the time and the responsibility to dig into the goods to find out their points of interest, their peculiar uses, their little odds and ends of news that keep the salesmen constantly refreshed and interested. Witness the campaign of the "3 in One" Oil Company to discover odd, interesting, and unusual uses for their goods. The Johns-Manville Company last year worked out a similar campaign. The salesman, like the actor playing one part for a long time, suffers from the dryness and staleness of his repetition, unless the home office gives him the means to take a fresh interest through novelties in the way of facts and presentation.

Finally, though perhaps the reader may not agree with me, it is my belief that the sales manager must be familiar with the domestic life of his salesmen. I speak soberly when I say that the biggest influence for failure or success in the salesman lies in his wife. You have heard of the engineer who ran by the "Stop" signal because he had had a row with his wife before he left for work. It is true. A man cannot work with the weight of anger, remorse, dread, or fear on his mind. You must needs be extraordinarily tactful, and diplomatic in this, not to interfere. You must be as wise as a serpent and as gentle as a dove, for Mr. Salesman would justly resent your attempting to step into his home life. And yet, if his little girl is sick; if he has just been notified that his rent has been raised 100 per cent; if Mrs. Salesman is jealous of his pastimes while he is away; these are the things that you must know and do what you can to counteract. You must know your man's foibles and weaknesses; if he is an inveterate gambler; if he is a lady's man; if he is a booze expert. You must know and help him to find his weaknesses. He may be so good a man in spite of them that it will pay you to retain him, or it may be that you will be wise to drop him when you are convinced there is no cure, for a salesman is not judged by sales alone. The reputation that he gives your house is vastly important. I maintain that he cannot gamble away his or the firm's money, nor win his custom-

er's money, and ever deal with that customer on a fair and square basis. He will either be more friendly than he should, or more hostile. I maintain that he cannot keep up night after night an endless search for "the golden girl" and put in satisfactory work. I maintain that too close a friendship with Mons. Barleycorn will put him out of the running and your sales organization. I'm not saying any of these things prudishly, and I have no quarrel with moderation and do not mean that these things apply only to salesmen.

IV

You will see from what I have said in preceding paragraphs that I have practically required the sales manager to be an expert diagnostician of mental and physical conditions. When he has accomplished that he has gone half-way on his journey towards successful sales managership, and the maintenance of sales morale.

He must have remedies for what diseases he finds. I will list a few of them for the consideration of the readers of *Administration*.

Foremost among remedies I place *encouragement*. The man does not live high or low who can live his life without someone believing in him. I believe the salesman's wife is his best sales manager, and the most faithful ally that he has. When a man knows that someone believes in him he is forever unconsciously checking every act of his by that belief. If he can know that you believe in him, that you know what he does, that you recognize his special success, whether in sales, in reduced expenses, in unusually excellent interpretations of house policy, whatever it may be, he should receive his encouragement and acknowledgment. The executive who brutally wires or telephones, "All right—where is the next order?" without acknowledging the first one is lacking in sympathetic understanding.

They tell the story of Napoleon, who listened patiently while a general described a battle, and when he had finished, his face glowing with pride, Napoleon said, "And what did you do next?"

That is all right, provided there was an acknowledgment of the first victory. The man who is told when he succeeds that that is what he was hired for feels that he is working for a slave-driver, or a machine.

Judicious encouragement, honest encouragement, is a wonderful remedy. I have known salesmen to carry letters in their pockets for weeks, showing them to their customers with whom they were sufficiently intimate, with pride and satisfaction. The right salesman will wear himself to the bone to live up to that confidence and justify it.

Next in potency, it seems to me, is *information*. Life is built up of facts. These facts are coated with emotion, but the facts are the solid ground-work of life. If your salesman is failing through some fact known to you, it is your duty to give that salesman this information. It may be information about himself, about his line, about his territory; but you are the agent of transmission. You are the man who must know what that fact is, and don't think that generalities will do the trick. A page full of words hurled at a salesman's head might better have been thrown into the wastebasket. Three lines of intelligent information will do him more good. I had a man who got married this summer—a splendid salesman. And because perhaps, he was such a good salesman he took his girl and

his marriage very much to heart. It engrossed his entire time. There came a day when it was necessary to recall him to the picture of three meals a day, and a place to sleep—and it was done, sympathetically and pleasantly. He responded like a thoroughbred, and has been producing ever since. It was the sales manager's job to know what was wrong. It was his job to right that wrong, and in so doing he advantaged both the house and the salesman.

V

Inspiration, which is largely emotional, is a necessity. There must be some element of esprit de corps, some magical illumination of life with loyalty and the rewards of success. But you cannot sustain life on this alone. Hence I believe that there is a danger in the too common and frequent use of inspirational material. It is too convenient and too easy to send out a page of Emersonian cocktails in the place of some hard thinking. And furthermore, the sales manager who gets back returns from his use of inspiration should not forget that some of its value lies in its rarity. To degrade it to a bread-and-butter status is to deprive it of its keenest value. Were diamonds as common as pebbles on the seashore, though they were still beautiful, they would not have the value they now have.

Finally, among the remedies is the "lash."

Most sales managers shirk it. A few use nothing but the lash. There is no one man, woman or child, employee or employer, subordinate or executive, who does not stand in need of correction at times. As able as we are, as civilized as we are, as educated as we are, yet we are too close to the primitive man to be able to run our course without error. Realizing this, we should not be impatient of correction and we should not shirk the responsibility of administering correction when we know it is necessary.

There comes a time when the only thing that will help your salesman is a thunder bolt — when he must be told flatly and without shock-absorbers that he is wrong, and that he must mend his ways.

Your success in doing this will lie in how far you have demonstrated to your sales force, by your daily life and actions, that you are of the Brotherhood of the Friendly Heart. I believe that most of us will accept anything, no matter how scathing, no matter how condemnatory, if we feel that the attitude behind the denunciation is genuinely and honestly friendly, and that we even resent a compliment from the man whom we believe lacks this feeling.

Remember that morale represents a happy medium, not an intoxication of high spirits nor the debasement of low spirits. It means poise; confidence. And morale during the past easy years has had as its task largely the bringing of salesmen down from the clouds, and the requiring that they walk on the earth.

BUSINESS ANALYSIS FOR BANK LOANS

BY CLINTON E. WOODS*

IT is said that in number, 60 per cent of the manufacturing concerns in this country fail sooner or later.

It is further reported that out of 350,000 manufacturing concerns, less than 50 per cent of them pay a dividend.

It is also stated that less than 20,000 manufacturing concerns out of the above number know their actual costs.

This triple combination constitutes the hazard of a bank in making loans to industrial concerns, notwithstanding which, industry must borrow and banks must loan, if permanent prosperity is to be kept from becoming a "Has been" possibility.

Any banking concern in making a loan must of necessity be governed by a "Safety First" policy, but from this time on, this "Safety First" has got to be armored with something more than a monthly balance sheet or a certified audit; based on which the writer has time and again found concerns who have borrowed twice as much as they were entitled to, while he has found many more concerns who were cut off with much less than they should have had. In either case, balance sheets and audits were all the banker had to go by, so his "Safety First" policy failed in both cases because in one instance he took double the direct risk he should have taken, and in the other, he doubled his risk by crippling his client. The writer has observed in several instances that the latter has often proved a greater risk than the former, and probably accounts in a measure for the large number of failures quoted above, both conditions being brought about by an absence of real facts on which to support a "Safety First" policy in making a loan. Yet never has there been a time when industry needed the support of banks as it does now, or when it was so absolutely necessary for a bank to broaden its perspective and relationship with industrial concerns.

That these conditions are true is being recognized by some of the big banks of this country, and they are setting up means and ways to work with manufacturers so as to insure a "Safety First" policy to themselves, and at the same time be on more intimate and co-operative terms with their manufacturing clients; as they recognize fully that the industrial situation of today and its relation to banking interests is such that the modern banking institution is no longer in a position to stand aloof from the numerous problems arising every day in the Industrial World, affecting as they do, all questions of labor, production, market, finances, etc. Therefore, the great necessity of today is a "Get together" measure of procedure between banks and manufacturers in order to meet the increasing needs of the latter in such a way as to assure the former a safe and logical way of making loans, and to do this requires a somewhat different mental attitude on the part of the banker toward manufacturers, and a much deeper research into the actual status and requirements of such industries than has heretofore existed.

Such banks as the National City Bank of New York and the Bank of

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America of New York, have undertaken to solve not only their own problems, but those of the manufacturer, by organizing an industrial department in the bank itself. The purpose of this department is not only to protect their loans on a much more satisfactory and "Safety First" policy, but to make such investigations as will uncover absolute facts in connection with any and all operations and problems and straighten them out for the manufacturer on a service basis of some kind, for which the manufacturer pays the bank.

They have found this very necessary because the form of statement and monthly balance sheet given banks usually covers nothing but the current assets, fixed assets, current liabilities, and fixed liabilities, and contains little if any information as to the true status of a manufacturing concern, especially as regards the physical conditions of the plant, the methods employed for controlling production, the true status of inventories, the personnel of the organization and its political aspects, etc. Neither do such statements indicate in any sense, how costs are really arrived at, or by what means depreciations are absorbed into costs, or what control of the market a concern may have for its product, or what its present output is as compared with its possible plant capacity, or whether the plant is operating on a reasonably efficient basis as a whole; all of which information it is necessary for a bank to know in order not only to protect its loans, but to provide the manufacturer with such amounts as are necessary.

There are few banks, however, which are large enough to instal and operate independently an industrial department of its own, yet if it is a necessity for one bank it is a necessity for all banks not only for the bank's protection, but also that the bank may help its manufacturing customers by forcing them to take a survey of all the conditions and operations under which they work, thereby creating a protection for both the bank and the manufacturing executive.

Such banks as do not or cannot have an industrial department of their own should form a connection with some independent industrial engineering concern and see to it that manufacturers in whom they are interested employ such service for which, of course, the manufacturer is to pay.

It is time to look industrial conditions squarely in the face and cite some of the reasons why there is such a hazard to banks in loaning industrial concerns. The aftermath of the war has found nearly every manufacturer carrying at cost, large amounts of obsolete material, both raw and semi-finished, and has found all manufacturers suffering from a tremendous shrinkage in values on their inventories as well as on their plants. In many instances, tools, dies, jigs, fixtures, patterns, drawings, etc.—the value of which is questionable, and many of which have become obsolete—are carried on the books of a manufacturing concern at cost price simply because manufacturers are timid about telling the truth to the bankers for fear a loan may be reduced or desired.

It is also a fact that at the present time, nearly all manufacturing concerns are laboring with a very unbalanced inventory, and it is also a fact that there is a tendency on the part of manufacturers to stop writing off depreciations, and to stop any and all expenditures for repairs in order that costs and profits may make a reasonable showing for the purpose of encouraging their bank connections. Any and all such methods are not in any way reflected in ordinary balance sheets, or certified audits, especially

if it is simply a verification audit, neither do they reflect intended dishonesty on the part of the manufacturer. Wrong methods and customs often habituate such things into a rut, the chance of which is now greater than at any previous time.

Another situation that presents itself at the present moment is that in their eagerness for business during the present depressed times, manufacturers are inclined to make radical reductions in the sales price of their product, which naturally sets up the cause for inquiry as to whether they are doing this on reasonable and rational lines, or whether they are simply taking a plunge for the purpose of keeping their market from getting away from them, the important question being the present disposition of overheads as related to present price cutting.

All of the foregoing are things which are of tremendous importance to any bank who is loaning manufacturing institutions, and who by virtue of making such loans is entitled to any and all information that can possibly be given regarding the general status and conduct of a concern.

In a recent address given by Mr. Schwedtman of the National City Bank of New York, he stated that he believes that within five years there will be very little money loaned in the United States to any manufacturer who does not present a statement showing total information, not only regarding his assets and liabilities, but also information to indicate that he is conducting his business on an efficient basis, that he absolutely knows his true costs, and that all questions of depreciations, obsolescence, etc., shall be set forth in a clear and lucid manner, so that any bank may understand the policy that dominates the obtaining of costs, the pricing of his goods, etc.

It is a fact that most executives in manufacturing concerns live too closely to plant conditions and to employees. It is an undeniable fact that such an executive becomes rutted before his employees do for the simple reason that he rarely finds a time when he is able to drop the current work of his particular office and take up a study and analyze with undivided concentration the various problems, frequently controlling his plant, of which he may not be aware.

The nature of most executives' duties is one which deals in generalities, and not any specific detail. It frequently happens, moreover, that these executives do not have the training and experience in accounting and engineering work that qualifies them to make the analysis that is required, and frequently they do not have in their employ, men who are qualified to do it. The result is that statements and accounts drift into a rut and have not the comparative value they should have to give control to affairs, and so the business jogs along until something happens; and that it frequently happens is indicated by the 60 per cent failure already quoted.

Five years ago, a very small percentage of manufacturing concerns employed either professional auditors, appraisers, or engineers, but the profitable results which have resulted to manufacturers from independent surveys and examinations of actual conditions by outside engineering concerns, have attracted the attention of the larger banks to such an extent as before stated. Some of them are establishing industrial departments of their own, while others are now insisting that their manufacturing clients employ professional experts to make such surveys as the bank may require for its protection.

What these surveys cover becomes, of course, of interest not only to the

bank but to the manufacturer. The following indicates a line of procedure which should be followed in part or all, as each case may demand, with which information a "Safety First" policy for loans is practically insured and the manufacturer is really forced to take inventory of the true conditions under which he operates, which only too often prove to be very different from what he had supposed them to be:

1. The Product Made
    - (a) Whether it is of a large variety of types and kinds, consequently a small volume of output on each, or whether it is a few types and kinds, with a large volume of output on each; the latter class are usually better dividend payers than the former.
    - (b) By-products, their value and possible market.
2. The Plant and Its Equipment
    - (a) The adaptability of the buildings to the product made, and their physical condition.
    - (b) The equipment and its mechanical condition.
    - (c) Present utility and adaptability of equipment.
    - (d) Lack of balance, i.e., whether one department is overequipped and another underequipped; as frequently lack of balance in equipment will either cause a low average of production, or indicate overinvestment.
3. Organization
    - (a) Executives' duties, experience, and ability.
    - (b) Department divisions and foremanship required, as frequently it is found that lack of supervision is the cause of great inefficiency and rejected product.
    - (c) Departments. How laid out as to sequence of operations.
    - (d) Shop trucking, method of handling work, etc.
4. Inventories
    - (a) Raw material. Nature of sources of supply.

    - (b) Over- and underinvestment in raw materials.
    - (c) Obsolete raw materials carried as live inventory.
5. Work in Progress
    - (a) How controlled by production methods.
    - (b) Stores methods.
    - (c) Conditions of inspection and ratios of rejected work.
6. Finished Stores
    - (a) Physical conditions of; storage and handling of obsolete items on hand.
    - (b) Changes in design.
    - (c) Method of checking.
    - (d) Method of ordering production.
    - (e) Normal value of inventory as compared with present market requirements.
7. Labor
    - (a) Number of employees.
    - (b) Labor turnover.
    - (c) Method of paying labor by month, day work, piece work, premium or bonus system.
    - (d) Method of hiring and firing.
    - (e) Synopsis of labor troubles.
    - (f) Synopsis of welfare work done.
8. Costs
    - (a) Whether actual or estimated.
    - (b) Basis of computing in either case.
    - (c) Whether obtained on batch method, monthly method, or continuous manufacturing method.
    - (d) Distribution between labor, material, and overhead.
    - (e) Methods of distributing overhead to departments and products.
    - (f) Method of computing costs and making distributions to betterments and repairs.
9. Engineering
    - (a) Railroad facilities.
    - (b) Shipping facilities.
    - (c) Power generated and purchased.
    - (d) Design of product made and changes made by engineering department from month to month (a condition which, if not controlled, will ruin any company).

10. Sales Policy
    - (a) Method of price setting.
    - (b) Policies in general.
    - (c) Credits and terms of sale.
    - (d) Whether contract work or whether goods are made and stocked.
    - (e) Amount of foreign business.
    - (f) Amount of domestic business.
    - (g) Cost of making same.
11. Operating Reports
    - (a) Basis of placing purchase orders.
    - (b) Basis of scheduling product to be made.
    - (c) Basis of stocking goods.
    - (d) Daily, weekly, or monthly production reports.
    - (e) Daily, weekly, or monthly shipping and sales reports.
    - (f) Daily, weekly, or monthly repair reports.
    - (g) Daily, weekly, or monthly betterment reports.
12. Accounting
    - (a) Relation of inventories to balance sheets.
    - (b) Relation of inventory control, production control, cost control, and controlling accounts for a monthly or period of accounting balance sheet.
    - (c) Nature and design of monthly balance sheet and statement.

If we take into consideration the fact that there are 350,000 manufacturing concerns in the United States as reported by the government, it is estimated that there are also in the neighborhood of 10,000,000 workers employed in these plants, and the much challenged question of welfare work is in reality becoming of prime consideration, in such cases as can be unconsciously absorbed by the worker. This has particular reference to light, heat, ventilation, sanitation, etc.; to provisional methods employed for personal conveniences, in the shape of lockers, tool storage, habitation, and transportation, all of which have a great influence on the mental attitude of workers, not only toward the work they do, but toward the concerns for whom they work. Therefore it is safe to say that a general survey of such situations is necessary in order to obtain a measure of efficiency.

All of the foregoing problems are not presented here as being something new or radical; they are conditions and facts well recognized by any legitimately experienced industrial engineer, in a lesser degree by manufacturing concerns, and in a still smaller way by banking institutions.

Boil all of the relationships between banks and manufacturers down to a single word, and it spells—Partnership—which means nothing more or less than such a combined interest as will produce co-operation in an effort for success, and it seems to the writer that this is so obvious that it ought to be readily accepted by manufacturers, but unfortunately this does not seem to be the case. I believe the time has come when it is absolutely necessary for the bankers themselves to broaden their perspective in connection with industrial concerns and establish this thought more firmly in the minds of manufacturers, pointing out to them their own weaknesses in many ways, and at the same time indicating means by which a closer working relationship can be established between the two. There are plenty of able engineers in this country, plenty of well qualified engineering concerns that can act as a medium between the banker and the manufacturer for the purpose of working out a better relationship, and it seems to the writer that it is now really up to the banker to insist that such work be done as these engineers can do, not only for his own protection, but for the good of his client. Larger institutions, of course, are able to employ engineers of this character and pay the salaries that they demand, but smaller institutions are not.

CUTTING COSTS BY SPECIAL EMPLOYMENT TESTS

BY RUSSELL J. WALDO*

FORTUNATE for both employer and employee is the passing of the method of hiring employees in the old haphazard manner. Such a costly method is rapidly being replaced by a more accurate procedure in the selection and placement of employees.

The former system of simple questioning could gain nothing except such facts as the applicant wished to give concerning himself. This information in nearly every case proved his own opinion of himself. Seldom, if ever, did it give a definite, clear-cut statement of his ability or offer proof that he knew of what he spoke. This old method has, during its extended use, cost executives large sums of money every year in turnover, low production, and spoiled material. This added cost is in turn paid by the purchaser in the purchase price.

A period of depression has now arrived when skilled men can be had, if some satisfactory method is installed to assist the man who hires to determine with the greatest possible accuracy how much the man before him actually knows about the position for which he is being interviewed.

Several methods of questioning, pleasing to the eye, have been passed on for use in this task. These have been made up of questions for the purpose of getting the applicant to tell what he knew without definitely proving it. Replies to these questions were nearly always facts which the average man simply repeated from similar experience or from talking with those who knew. Yet because the man who hired often knew little regarding the actual workings of the proposed position, he accepted the replies with, "Well I guess he knows what he is talking about. He seems to make a full statement without stopping to make any of it up."

After some such manner of incomplete and inadequate questioning the interviewers have selected the most complicated element found in the industrial world, namely, the worker.

It is the present writer's definite purpose to acquaint the fact-seeking reader with the methods of employee selection used by him while with the Studebaker Corporation. He is confident that because they proved most successful while there they would prove equally successful in other plants using highly skilled workmen. This condition obtains because a highly skilled man must possess the same or very nearly the same knowledge in one plant as he would in another.

It should be clearly understood that no method of selecting skilled workmen, whose very qualifications make their identification difficult, regardless of how accurate it proves can ever attain absolute perfection. However, the major part, or practically all of the guesswork can be removed by the careful use of certain tests. Yet, because machines, made by men according to blue-prints, can be selected with mathematical certainty it does not follow that any man possesses the ability to determine accurately the elements designed and kept in existence by a Divine Hand. Our Creator has designed each and every man upon a different plan, under different

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conditions, and with varying results. So every man is brought into existence for some definite purpose and it is for him to try until he finds that task. Guided by an unseen hand, he seeks to find the task which he can do best and in which he can prove most efficient.

There are then certain definite standards which can determine what a man would prefer to do; there are standards which can prove, beyond doubt, what a man knows, still there has yet to be found any standard which will prove beyond doubt exactly what a man's inherited abilities are. To a certain extent indeed inherited abilities can be determined, yet there remains much to be ascertained before such tests can claim to be absolute proofs. Let us see how selection tests are used.

II

When the employer first awakens to the fact that more care must be exercised in selecting employees, he naturally turns to the employment department, if he has one. If he has no such department, he then turns to the department head to whom the task of selection has been assigned. Note here that executives little realize how serious the task of hiring is or what factors should be practically natural in the man who assigns employees to work.

Busy executives can not be blamed for this entirely. It is possible that they have not yet realized the importance of the task or the essentials necessary in a man who can successfully hold this position of director of employment. They believe too often that every man who claims he is a first class tool-maker or gauge-maker is just what he claims.

The past few years have, however, brought us to face this problem in a more serious mood. Men have sought employment and bluffed their way into jobs they could not hold. Employers have stood for this sort of thing and now when they realize that their only way out is to hire the men who can actually do and do successfully the tasks for which they are hired, they are seeking some method by which they can successfully identify these men.

As a solution of this problem and getting results far beyond expectation, I wish to impress upon the reader's mind the fact that they are thoroughly tried and proved plans. They are usable for the majority of persons and in every known industry; they apply to the office boy, store clerk, salesman, or superintendent. Moreover, the actual making out of the tests required the minds of more than one person and constant revision to prevent useless material from creeping in or to make additions as needed.

Now if the employment department is to be in a satisfactory position to reduce the production costs by assigning to the right task the man who can produce or sell the goods with the least expense to the employer, it must possess standards by which to gauge applicants and to compare the job to the man, completely and accurately.

It is true that the knack of knowing human nature is not completely transferable from one to another. However there is a sufficient number of men who can judge human nature if they were properly placed in these employment positions. The trouble is that because the man possesses the requirements of some fastidious executive, who may ask for a college education, a neat dresser, a snappy appearance, membership in a certain lodge, ownership of a certain make of automobile, acquaintanceship in a southern winter resort, or a relationship to some suc-

cessful man, or perhaps other recommendations (and the writer has seen instance of them all) he is placed in the position. Little attention is given to the extent of his ability to judge a man or his inclination to do a complete job when placed in power.

A college education added to practical knowledge is, of course, a happy combination. The mere hiring of a man, however, on the strength of his being a college graduate or because he possesses the other qualifications already named does not signify that he is an efficient employment manager with ability to judge every man who appears before him. Some of the best employment executives have never attended high schools. They simply possess the inherent ability to fulfil their tasks.

III

The colleges have, however, helped formulate the trade tests. The leading universities have for many years conducted experiments and tests to make it possible for instructors to guide students into a certain class of work in which they could succeed better than in others. These tests have proved of such value for such purposes that they have been introduced into industry. They are, however, in a somewhat different form and are now designed for use in selection of the proper man for a task. While the tests which are used in the universities have not been applied exactly as in these institutions of learning, yet the fundamental principles have been employed with reasonable success.

Such a test to be of greatest success must be so formulated as to be understood and used by the man who does not possess even a high school education as well as the man educated in the higher institutions of learning. This is because the majority of employment executives are not educated beyond the grades.

It should not be understood that the trade test has been introduced just because it appeared to be a good thing. Had this been the reason, it would have been highly perfected before our last labor shortage. The test has been introduced out of experience to replace the haphazard methods of selecting employees for responsible positions. And the trade test has had to force its way into industry just as has every other device or method that makes for more accurate results. Only after the leaders have seen the benefits to be derived have they turned to the test as a means of meeting their modern selection problems. They demand something tangible; so the satisfactory results obtained by use of the especially designed trade tests have opened the way for their wider use.

It is readily agreed that executives have been slow to make use of the tests. They have been willing to go along the old path as long as they felt they could make a profit. They believed the human element could be selected with the mathematical accuracy that governs machines. When they had selected a man to do the hiring for them they turned their minds again to machines and materials. They felt that the workingman could take care of himself while they looked after the concrete problems. They thus left the most important element of their success to grope blindly while they centered their attention on the less important element.

The fact that a man possesses a mind, and is capable of expressing his thoughts and conditions both verbally and in writing has subjected him almost to injustice. Employers have felt that he could tell them exactly what they wanted to know; and on the other hand

that the employers could tell him what they wanted him to do and he would not do otherwise. After giving the employee a showing for three years, must the employer suddenly discover that the worker is a man capable from the very senses possessed by himself of a determination to have the job he is best fitted to fill? If he can get this in one place all right; if he cannot, he will try others.

IV

The making out of the trade test is profitable from two points of view: First, for the more accurate selection of employees; second, because of its value in instructing the employment executive in the fundamentals of the task upon which the test is being made. The following description shows why he learns.

In making out a test the author obtained every piece of literature available from the manufacturers; such as, photographs, operators' hand-books, parts books, and blue-prints.

In addition to this the manufacturers' engineering departments were freely referred to as well as foremen in the plant of the Studebaker Corporation. Through such agencies and the assistance of experts, he secured not only the means of making out the test but obtained a broader knowledge of the machine and task, thus making himself more efficient in selecting those who applied for places in the organization.

It was at all times necessary to keep in mind that the trade test was to be a complete method of questioning to determine what a man actually knew. It could not skip about in a haphazard manner from one point to another with no regard for completeness. This completeness in the tests with their special sets of questions combined with picture tests makes it possible to select a man with any special knowledge which may be required upon a given machine or job. Because many machines are equipped with special attachments for doing certain classes of work, tests to determine a man's ability upon these individual attachments were easily made out once the complete workings were understood.

The writer found that his own working upon a machine for half-an-hour if only to start and stop it (in addition to some other minor movements) made it easier to complete the trade test. This applies equally well to the bookkeeping machine, telephone switchboard, multigraph addressing-machine, lathes, planers, shapers, and other devices. The writer has personally operated multigraphs, telephone switchboards, elevators, Tela Calls, pneumatic tubes, and acted in many strange capacities simply to gain first-hand information upon the task. The findings have been of great value in selecting men for similar positions.

It should be observed that whether the trade test is to be used in connection with the department store, office, factory, or for executives the same fundamental principles govern the making out of the test, and when carefully and completely made out the same results are available for all who use them.

Some will contend that the trade tests are made up of nothing other than questions already being asked in employment offices. This to a certain extent is true. But now these questions are all written out before the interviewer; and with them before him he knows when he has asked enough. Furthermore, with the aid of these he may add others as suggested by those already on paper to bring out some point he is seeking. When the task is that of operator of some machine,

the picture test proves one of the greatest adjuncts the interviewer can have. This shows the applicant's knowledge by making him name certain parts of the machine and their function.

Because the majority of employment executives are not college graduates it would be useless to design tests which would require a college graduate to carry them out. There are, however, simplified tests which will permit the man now in the interviewing section to determine with a satisfactory degree of accuracy a man's ability by applying the identical principles although in a different manner.

The trade tests should not be confused with the psychological tests. They are not intended to accomplish the same results or to find out the same facts as the psychological tests. They are special tests designed to gain certain dependable information regarding a man's ability in the things he must actually do in connection with his work. The trade test will beyond doubt in time develop far enough to incorporate the psychological test, yet at present the average employment man must be content with the trade test. When the trade test has simplified the task of hiring, then the time saved can be used to advantage in making additions to the tests so as to include parts of the psychological tests.

V

Formerly the man hiring knew little about the job he was hiring for unless he had actually worked upon it. He seldom studied the job to know it better. In event he had worked upon the job he would then be able to give the man before him a very careful check-up regarding the task. But if he had not worked upon the task and knew little about it, he would then ask a few aimless questions of no real value in determining a man's actual ability. Typical questions were where he had worked, how long he had been there, and why he left. The answers regardless of what they were revealed nothing of a man's actual ability. The man in turn gave only such information as he chose to have the interviewer know, leaving the rest to his imagination. If the interviewer had taken a little more time in checking up the applicant and had used some definite standard in checking him up then there would have been a huge saving in costs.

It has, in fact, always been wasteful to hurry the hiring method and then have the same job to fill again later. A larger profit could have been realized if less men more carefully assigned had been the method. The big saving in employment department practice is not from the number of jobs filled but the ones filled the longest. The employment department like other departments is organized to perform its duties to effect the greatest savings to the management. If this be the case then the trade test can prove beyond doubt to be one of the greatest aids to economy to be used. It is not at all uncommon to see firms, who spend the greatest sums of money in the selection of their machines, use the most lax methods in the selection of their employees.

The writer has seen many men who have been so well read in the work applied for that the average questioning would leave little doubt of their ability providing the applicant had also faked his studies on the actual work. The trade test will give the interviewer an opportunity to actually prove through the applicant's response that he has worked upon the machine and knows what he is talking about, or he will fall down in the test.

After a careful study the writer has proved that a surprising number of men apply for a position because they know it is open. It should be carefully understood here that the best men are those who have the kind of work definitely decided upon and seek to find that place regardless of whether it is open or not.

As another important gain through the use of the trade test employees may be more accurately classified for bigger and more responsible positions. The executive who claims that he must "look on the outside" for employees will do well to make a study of his own employees with accurate tests and when the job is open, then give present employees first opportunity. There is usually a man already in the organization who can successfully hold any place higher up and with the use of the trade test these employees can be discovered, checked up, and prepared for the bigger job. Making use of present employees in this way reduces turnover costs because men will stay in service longer when they see an opportunity ahead. It is true there are firms which do not have in their employ men who are prepared for jobs higher up. These organizations can, however, show a greater profit if they will but check up their present employees and suggest ways and means for their future betterment.

To the executive who claims he does not have within his own organization men who are capable of the bigger job let the writer respond that in nearly every such case employees are actually leaving and doing the bigger work in other organizations and are succeeding. They are lost because there is not in use a method of successfully determining what men are capable of doing.

It is clear that when executives wait until a man leaves to fill a position higher up they show lack of foresight. There should be within the organization a man ready for every position beyond him, one who can step up on very short notice. Such a situation is recognized by leaders as the most important part of organization.

The time has come when men must be placed in the most responsible positions they are capable of filling. Energy and ambition combined with ability are far too valuable to be wasted and every executive who fails to see the true value in them loses sight of one of his greatest assets. Whether the man is in the organization or just coming in this should be borne in mind.

The fact that business leaders have continually been calling on the outside for employees for the big job, has cost the business world huge sums of money every year. This has been through labor turnover, unrest, discontent, advertising, breaking in new men, and accidents to new employees.

VI

The day when the man who can do everything is wanted has passed away. The employee of today must be a specialist in some branch of work. That branch he must know well. The specialists may have the experience that fits them for much other work yet they are in reality men of special preparation for special work.

Industrial leaders must, therefore, be on the alert to suggest special training for their employees so that they may fit themselves for special work. The man must know one job or one machine well. This is the law of modern industry. As with modern machines so with men.

It has been only within the last few short years that any definite standards have been set for the selection of employees. Haphazard methods pre-

vailed in nearly every shop. Men were inefficiently hired with incomplete investigation. In modern industry we find a new order of things. Instead of placing the first man in the first job open, those only are selected who are best fitted to hold that place. Indeed it has been proved unwise to select a man for a task unless he is fully capable of filling it, even if the place must remain open for a few days.

If the advance within the next five years is equal to that of the past five, methods at that date will be capable of surprising results. For at present methods can reduce the guess of selection down to an almost unbelievable percentage.

The writer has made out and used several classes of trade tests, many of which were unheard of but were found valuable and worked out. For that reason they are believed to be the only tests now in use for their purpose.

The question tests, although in existence, were very inadequate. Tests have been worked out especially for the apprentice, the man who has had experience on similar machines, the operator, and the highly skilled man such as "set up" or repairman.

The picture test so far as I know was original. This is made up of photographs of the machine with parts indicated by arrows. The applicant is expected to name the indicated parts and tell the functions of them. The interviewer checks the replies up by a key list. This class of tests also includes the special attachment test which is the same idea carried out on attachments used on the machine, such as millers, dividing heads, etc.

The special tools test is another part of this class. This is made up of pictures of special tools for the machine. The applicant must name them. The general data test is a test made up from a data list. The applicant must be able to answer special questions regarding the machines and sizes of various stock to be used and sizes of various pulleys and parts. The missing word test is a series of sentences made out with some important word left out. The object is to have the applicant place these words in as he reads.

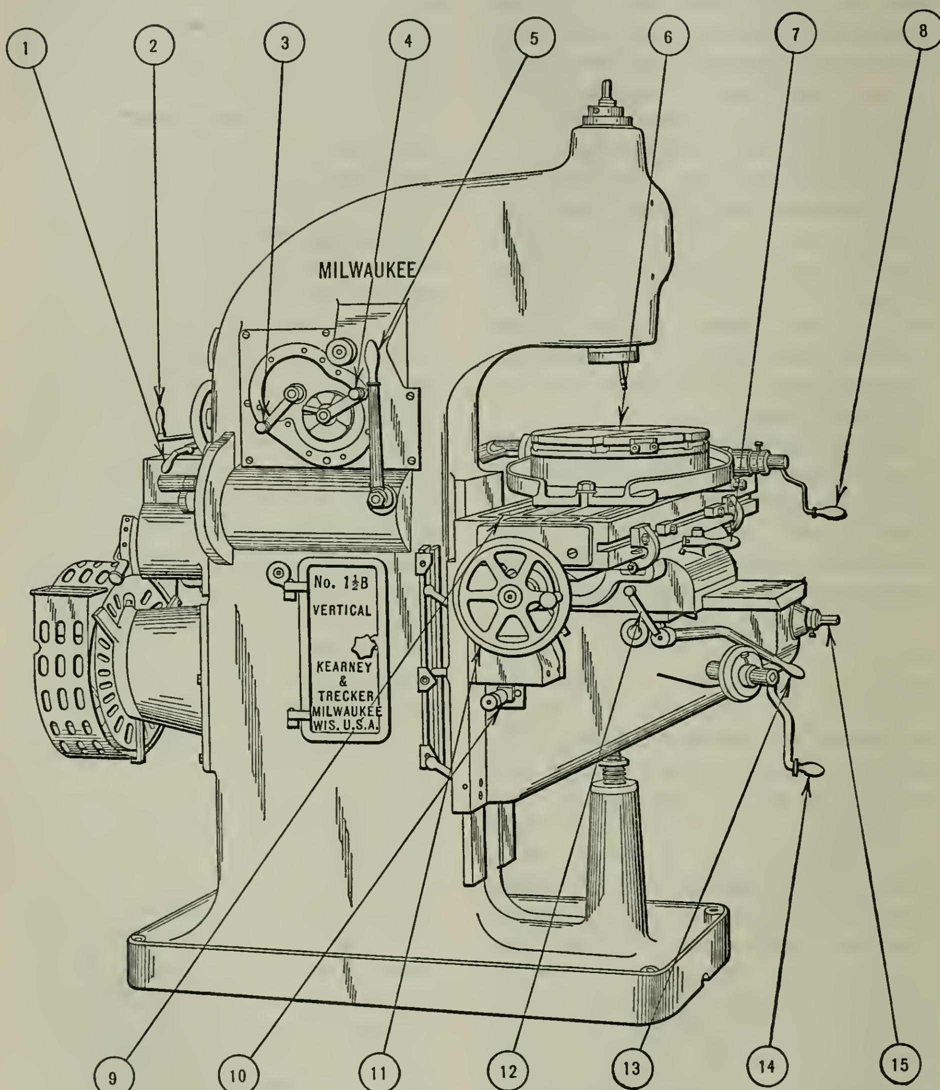
In addition to all the above we find the job specification very useful. This is a detailed description of the job, or what is expected of the man. It tells what the future is and gives all data pertaining to the job.

It is not the purpose of this discussion to give a technical outline of all these tests but to give a clear outline which will permit the reader to understand what to expect from the more modern methods of selection. Some general explanations may be added.

First of all it should be definitely explained that the trade test is not a scheme intended to corner the applicant. There are no catchy questions, but there are questions which will compel the men to think. These questions are determined to show whether a man knows of what he speaks. This is done by making him show in pictures and his very answers that he actually knows what he is talking about. The same results will be found under use by several different interviewers.

The complete picture test is made up of front, back, and aeroplane views. Parts which are continually used by the operator are referred to by arrows. The object is to ask the applicant to name these parts and tell their functions. This, if he is a capable man he can easily do. Both direct and indirect questions can be used. The direct question asks what is the function of a certain lever while the indirect proposes to ask the result upon certain parts of the machine if a certain lever is moved in a certain direction.

In selecting apprentices along cer-



Picture Test for Milwaukee Vertical Miller

Indicated parts are: (1) Speed segment lever, (2) Feed handle, (3) Sleeve gear lever, (4) Speed lever, (5) Starting lever, (6) Rotary table, (7) Table feed lever, (8) Crank for rotary table, (9) Table, (10) Feed interlocking lever, (11) Hand feed for table, (12) Saddle clamp lever, (13) Cross and vertical trip lever, (14) Elevating shaft, (15) Cross feed screw.

tain lines no definite experience questions can be asked in the majority of cases. It is of more importance to determine why he is interested and to determine if this interest is sufficient to warrant placing him at the task.

In selecting operators definite experience questions can be asked pertaining directly to the particular machine, including questions about operation and various common parts as well as set up problems.

The individual parts test is of great value to the interviewer in selecting highly skilled operators. This shows illustrations of many unassembled parts for the applicant to name. The experienced man can name them yet the inexperienced man can easily be caught when he attempts to do so.

It is impossible to determine just how far the trade test can be depended upon as being accurate. It has been proved beyond doubt that this sort of a test is capable of removing the greater part of guesswork in placing employees and is 90 per cent perfect.

Those who have seen the picture tests used in connection with trade tests have expressed themselves as greatly surprised and many have expressed absolute confidence in the possible results because of the practical method of operation and the determining factors involved in making the tests out. The idea is as follows:

Interviewer's Copy, Missing Word Test

Cincinnati Automatic Screw Machine

(In applicant's copy, words in parenthesis are omitted)

1. The master cam drum is on the (left) hand end of the machine.
2. A (hand control) wheel is provided on both sides of the machine.
3. All tools are held in contact with cams by (springs).
4. For (left) hand threading the threading mechanism action is changed.
5. The Cincinnati automatic is provided with (four) cross slides.
6. The chucks are of the (stationary) type.
7. Stock spindles revolve in a (forward) direction.
8. The Cincinnati turns any length up to (three) inches.
9. Cross slides are controlled by a (positive stop).
10. In case of accident the machine is provided with two (safety clutches).

Interviewer's Copy of Bath Universal Grinder Questions

1. Name all possible artificial abrasives.
   Ademite, aloxite, alundum, carbolite, carbo alumina, carborundum, carbondite, and criptolon.
2. Can work and traverse speed be changed while machine is running?
   Yes, independently.
3. When are work spindles locked?
   When grinding on dead centers.
4. What is a hob?
   A tool formed like a worm with which worm wheels are cut.
5. What is a spiral cutter?
   A milling cutter. The cutting edges form a portion of a helix parallel to the axis or longitudinal.
6. What should be the traverse speed of the wheel for roughing steel?
   About two thirds the width of the wheel.
7. What are the real uses of water?
   Keeps wheel clean and free cutting. It also prevents generation of heat.
8. In what way does the generation of heat retard the operator's progress?
   Causes work to get out of true.
9. What causes appearance of chatter and waviness in work?
   Loose wheel spindle, grinding wheel out of balance, grinding leaded or glazed with particles of material, or grinding wheel too hard.
10. Are there objections to using belts of uneven thickness?
    Yes, prevents uneven pull.

THE MANUAL OF PROCEDURE

BY P. H. MYERS *

THE idea of recorded standards and written instructions has been thoroughly accepted by those who have made a bona fide application of the principles of scientific management. The purpose of these recorded standards and written instructions, whatever their form, is to provide a text of approved practice. They are the natural culmination of the standardization program.

An important purpose of this article is to show that the preparation and use of a Manual of Procedure, which is one of the several types of instructions, will secure for any department of any kind of organization a substantial part of the advantages which may be obtained through complete standardization. Many companies which are by no means ready to accept in full the program of scientific management, will go part way and make a record of their organization, procedure, and standards. These beginnings may indeed be crude, but they constitute a step in the right direction. Even during the process of writing a manual, improvements are secured and the present procedures which are accepted as standard for the time being act as a constant spur toward further improvements.

A brief outline will be given of the entire field of written instructions and recorded standards, but the purpose of this outline will be simply to show the relation of the Manual of Procedure to the more general and more explicit types of instructions.

A manual is essentially a record promulgating and requiring adherence to accepted standards, whether they be policies, organizations, procedures, duties, forms, rules, practices, or methods.

In this paper three distinct types of manuals are recognized:

1. The company's General Handbook for Employees.
2. The Manual of Procedure.
3. Detailed Performance Instructions.

The description and functions of each of these types are briefly as follows:

1. The company's General Handbook for Employees is a printed and bound publication, issued by the company for the general information of applicants, and its employees, concerning new and old policies, rules, welfare provisions, etc.

2. The Manual of Procedure is built upon the department as the unit. Its function is to serve as a text of approved practice. A complete departmental manual sets forth in detail:

(a) Rules regarding the use and administration of the manual.

(b) Functions and organization of the department in general and of its important divisions or sections, and duties of positions.

(c) Routines covering well recognized procedures.

(d) Forms, records, files, and reports.

(e) Standards.

3. Detailed Performance Instructions set forth specifically the operations necessary in performing a given piece of work, the tools to be used, and the standard time allowances for the respective operations. Some show the exact method of performing the operation.

Each of these types of manuals serves its specific purpose, but the gen-

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eral purpose of them all is either to acquaint the employee with the policies and rules of the company or to give him instructions as to how to perform his work to the end that he may be a better employee, to both his own and the company's gain.

The above outline of the types of manuals shows that the manual of procedure occupies the middle position between the generality of the employers' handbook and the explicitness of the detailed performance instructions.

The purposes which actuate a department in the preparation of a manual of procedure are as follows:

1. To Establish Definiteness. This definiteness furnishes the basis for most of the uses to which a manual may be put. These uses will be detailed in a later section.

2. To Secure Improvement Through Preparation.

(a) Through the correction of nonstandard conditions. During the course of preparation of the manual unsatisfactory conditions are observed, and these are often corrected at once. Such improvements may be as follows:

(1) Lines of authority are often made definite; poor organization is improved; overlapping is eliminated.

(2) Procedure is often simplified and improved; loose ends are tied up; duplication of work is remedied.

(3) Standards of work or practices are sometimes set, or if already in existence, they may be improved.

(4) Unnecessary forms, records, or reports are eliminated; those that are necessary but not in the best form are often improved.

Note the following improvements made during the early stages of the preparation of a manual in one department of an electric railroad.

Line of authority to be defined as to relation of—— and ———. (Two responsible officials.)

In ticket auditing: Analyzation clerk to assume task of reporting sales of 60-ride ticket books, as well as of 10-ride and 25-ride books, the routine being similar.

Vault clerk to post ticket stock disbursements to stock ledger from original ticket invoice after it has been signed by and returned by agent or recipient, instead of from duplicate copy not bearing that receipt.

Forms No. 97 and No. 128 to be standardized by the design of a single form to cover the identical purpose of the two—a request to the auditor to issue a time-check for a discharged employee.

Time report blanks to be standardized and printed. (This action, previously conceived, was hastened by the manual work.)

The routine of reporting job order costs by the——Department to be greatly reduced through co-operation of the——Department.

(b) Through development of thinking and writing ability. The method of going about the writing of a manual and getting it together as a complete compilation is the subject of another paper. However, it may be said here that the manual is usually prepared within the department and by the department's own employees. The supervision and the technique may come from without, but the actual work of drawing the chart of organization, preparing the routines, and defining the duties of the various classes of jobs or positions, are done by certain assigned employees chosen for their fitness for the particular task. The first drafts are usually crude, but the constructive criticism, the further investigation, the rewriting, and the committee work involved in putting the sections of the manual into semi-final and final shape is an education of real value for those concerned. It is true that in manual committee meetings there were never less than two dictionaries at hand, and that some one was always busy looking up definitions.

(c) Through improvement in interdepartmental relationships. The contact secured with other department representatives in these meetings almost always results in a better understanding and appreciation of each other's functions and problems. Anything that will improve interdepartmental relationships and tend to make the company, not the department, the unit, should be welcomed.

3. To make a Record of Routines and Decisions. The old and experienced employee often carries much valuable information "in his head." A record of this information should be made so as to prevent a possible loss through the separation of such an employee from the company.

The Uses of Manuals are set forth in the following:

1. The Manual Is an Aid to Instruction. The very definiteness of the manual makes the duties of the employee and the procedure of which his work forms a part clear to him after a comparatively brief study. Duties, statements, and short routines are often gotten out on cards or separate sheets of paper, specifically for instruction purposes. In other cases, those sections of the manual pertaining to the work of the group or section are given to the employees affected.

The manual gives the employee an exact knowledge of his own duties, and of his place in the routine. It shows him his relation to his particular group or division, and the relation of such group or division to the organization. Under these conditions the employee has no excuse for doing his work in any but the right way. If he fails, he knows where the responsibility will be placed.

Study of the manual saves much valuable time that would otherwise be required on the part of the supervisor in giving oral instruction. What is more, the instruction is accurate and alike for all employees in the same work. If an employee is in doubt he may be backward about asking questions of his supervisor, but he has no hesitancy in referring to his manual again and again.

2. The Manual Serves as a Text of Approved Practice. The manual codifies approved practice, organization relations, and instructions, and does away with the mass of unrelated, contradictory, and partially obsolete letters, circulars, or bulletins which, before the manual was prepared, were relied upon to meet this need. The manual not only codifies these instructions, but reflects all changes—which was not possible under the old system.

A manual kept up to date definitely prevents disagreement; it is a case of "look in the book and see." Of course, no one pretends that a manual does or should cover every possible eventuality that may arise in the conduct of a business; it sets forth the main lines of procedure and many of the minor ones, but there are some cases that must be left to the employee's best judgment, based on experience. On those cases covered by the manual there can be no disagreement.

The manual helps to maintain and improve interdepartmental relationships. Each department's manual takes up a given routine at the point where it leaves the prior department and carries it to the point where it crosses the line into another department. With such definiteness, interdepartmental misunderstandings and quibblings, accompanied by endless correspondence, inaction, and loss of time, are reduced to a minimum.

3. The Manual Is an Aid to Supervision and Management. The manual gives the supervisor definite information as to organization, routines, and duties, not only in his own department, but in others. Access to other manuals

is secured through the central file. A department head is always annoyed when it is suggested that a manual will help him to a better understanding of the work of his own department, because he feels he knows it thoroughly. Except in rare instances, however, he does not know it so well as he thinks, and a review of the tentative drafts of the organization, routines, and duties submitted for his approval causes him many surprises.

Through definiteness and assurance of standard treatment, the manual improves the relationship of the employees to the management. The employee knows well the difference between the organization that is managed as it should be and the one that is not—the one that runs like clockwork and the one that runs hit or miss.

4. The Manual Forms a Basis for Development Work. Through definiteness in routines and standards the manual leads to definiteness in the making of recommendations for improvements. Although the regulations are observed in every respect while they are in force, each employee is urged to make note of and report on the rough places he sees, and to submit his suggestions for betterment. He should specify the exact section and subsection involved, and submit the exact wording he proposes as a substitute. A requirement that all such suggestions must be passed upon and definitely approved or rejected adds still more to the incentive to make improvements.

The manual furnishes an excellent basis for an "audit of detail," or a "system audit," as it is variously called. Whereas it is the usual practice to make the supervisor of a division responsible for adherence to the regulations, some organizations require a periodical check-up of procedure. This audit is made either by a resident or a retained industrial engineer.

The manual furnishes an excellent basis from which to go ahead in making betterments. The management knows that the need exists for further standardization, and as rapidly as possible, makes the improvements, using the manual as a basis.

The following outline shows five main chapters that should be included in a complete manual of this type. The subheadings are suggestive only; they will vary with the kind of business.

Chapter 1. Purpose and Use of Manual
- (a) General purpose
- (b) Contents
- (c) Use of the manual
- (d) Initiation of changes
- (e) Approval and making of amendments
- (f) Method of administering the manual

Chapter 2. Functions, Organization, and Duties
- (a) Administrative division
  - (1) General functions of the division
  - (2) Organization of the division
  - (3) Duties of positions
- (b) Addressograph division
  - (1) General functions of the division
  - (2) Organization of the division
  - (3) Duties of positions
- (c) Bookkeeping division
  - (1) General functions of the division
  - (2) Organization of the division
  - (3) Duties of positions

Chapter 3. Routines
- (a) Administrative
  - (1) Personnel
  - (2) Supplies and stationery
  - (3) Maintenance of office equipment
  - (4) Relations with customers
- (b) Functional
  - (1) New accounts
    - Opening new accounts
    - Recording new accounts
    - Enter'g changes in billing instructions

(2) Billing procedure
 Typing bills
 Posting to ledger sheets
 Checking bills
 Dispatching work
 Making statistical summaries
(3) Bookkeeping procedure
 Posting cash
 Balancing ledgers

Routines are not confined within department limits because most organizations are not built upon functional lines. A routine may originate in one department, cross over into a second, and finally end in a third, and it may affect three or four divisions in each one of these departments. For this reason it has been found desirable to break up the routines into sections and subsections so that the employees interested in certain parts of the routine may be given those parts only for instruction purposes.

The features that distinguish this type of instructions from the other types, namely, the rules in the company's General Handbook for Employees and the Detailed Performance Instructions, are that they prescribe:

1. The accepted method of procedure, including duties the respective employees are to perform in carrying out the procedure.

2. The accepted standards of quality or excellence to be attained in the performance of the work.

Examples of routines or instructions in actual use are given later in this article.

Chapter 4. Forms, Records, Files, and Reports
 (a) Regulations
  (1) Description of form, record, or report
  (2) Use of form, record, or report
  (3) Disposition of form, record, or report
 (b) Regulations regarding the establishment and upkeep of a file of all forms and records in use.

In some manuals this chapter is not recognized, but full descriptions of the forms and the method of using and filing them are included in the routine. Some manuals go so far as to include copies of the forms in the text. The effect of both of these practices is to encumber the manual with a lot of matter in a place where it does not belong. It seems best to prescribe in the routine the use of a certain form by a certain employee for a certain purpose, but not to describe the form nor to show how, when, and by whom it should be filed, how long it should be kept, or what disposition should be made of it. These latter points are proper subjects for treatment in a separate chapter of the manual.

The form file is very important. All forms and records in use are filed in numerical, alphabetical, or other order and labeled to show their use. Some companies maintain a duplicate file of forms in routine order. In addition, a rubber stamp impression is sometimes made upon each one for the entry of its name, number, when ordered, number ordered, date to which supply is to last, and any notations regarding the improvement of the form as to its design or use, or suggestions for decreasing its cost.

Chapter 5. Standards
 (a) Classification of accounts
 (b) Filing classifications
 (c) Library classification
 (d) Information file classification
 (e) Material classification or code
 (f) Standard form letters or paragraphs
 (g) Standards of style, conciseness, clearness, etc., for dictators and transcribers
 (h) Interest tables
 (i) Mortality tables
 (j) Conversion tables
 (k) Tables of equivalents

In every office or department there are certain standards which are not in

the nature of routines, but which nevertheless are to be adhered to by those having to do with them. Many of these standards, because they are published outside of the department, or for other reason, will not be reduced to standard manual form and actually included as part of the manual.

The excerpts given below indicate types of procedures, routines, rules, or instructions. They are taken from manuals in actual use.

The following routine is from the Plant Accounting Bulletin of a telephone company:

Material Held for Repairs

62. The storekeeper will notify the garage foreman daily, or as often as necessary, of items on hand requiring repairs, giving the standard name and code number and quantities of each. This report will be made in triplicate, the original sent to the garage foreman, the duplicate to the supervisor of supplies and garage for his information, and the triplicate retained by the storekeeper. The garage foreman will request the supervisor of supplies and garage to issue orders to repair items, the cost of which will be $10 or more for labor and material; if the cost for repairs will be less than this amount, they will be made without a formal order from the supervisor of supplies and garage, and the expense charged to the appropriate account. The garage foreman upon receipt of an order from the supervisor of supplies and garage, authorizing him to make certain repairs, or if no order is necessary, will at his direction, if repairs can be made in the shop, assign the job of making required repairs to the proper foreman, furnishing him with a copy of the work order, or if no work has been issued, with a memorandum order.

63. The foreman will present this order to the storekeeper, who will deliver the parts required for repairs to him after inserting in the proper spaces on Form 2710, Repair Card, the work order number (if any) and the foreman's name, and tear off the lower half of the Form 2710 which he will retain as the receipt until the foreman returns the parts.

3

The following paragraphs are from the manual of a soap manufacturer:

2. Assembling

21. Manufacturer's Bill of Lading and Manifests

211. Article Manifested Direct. Interleave with carbon and assemble with corresponding manifest. Clip the manifest and the bill of lading to the bottom of the shipping authority.

When there is more than one manufacturer's bill of lading, assemble separately each bill with the corresponding manifest.

212. Articles Manifested Here. Interleave with carbon and clip the bill to the bottom of the shipping authority. Clip the manifest to the top of the shipping authority.

22. Other Shipping Papers

Separate the packing records from page 1 and of the order blank unless stamped Do Not Ship.

When a memo showing express station is attached to shipping authority, do not assemble express tags with other shipping papers.

Field instructions are illustrated by the following excerpts taken from a set of rules issued by an electric light and power company, and filed with a state public utilities commission.

Meters

All meters must be installed in a suitable location as near as practicable to the point where the service enters the building. The wires should be enclosed in a continuous metal conduit from the service to the meter. In office buildings, special meter closets of ample size should be provided on each floor; in apartment buildings, all meters should preferably be installed in the basement, and the separate circuits to each apartment should be carefully labeled. In residences, meters should be installed in the basement or a rear hall, rather than the attic.

Installation

Meter loop fittings are required by city ordinance to be provided on all installations where the mains are of No. 2 B. & S. gauge or smaller. On mains larger than No. 2 B. & S. gauge, conduit fittings or standard meter loop fittings of proper capacity must be used. These fittings should be placed as shown on pages 39 and 40.

A type of meter loop fittings is recommended in which the wires between the fitting and the meter are protected with a metal housing and embodied in which is a meter test block. This type of fitting renders the customer's installation less liable to disturbance and his service is not interrupted by meter testing operations.

The rules issued for the operating department of a railroad furnish a still further type of instructions.

Placing Fusees and Torpedoes

99a. When a flagman goes back to protect a train at night, or in obscure weather, he will place a lighted fusee in the center of the track 500 feet back of the rear of the train, and proceed back until proper distance is reached to insure full protection.

If the following train is in sight or hearing before the flagman has reached the point insuring full protection, he must at once place two torpedoes on the rail, and at night, or in obscure weather, or if the view is obscured, he will, in addition, display a lighted fusee and continue toward the approaching train, displaying stop signals until they are answered.

Another type of instructions is taken from a manual for tire service plants, issued by a rubber tire company.

Spoke Tenons

In all cases where the shoulder on the spokes which supports the felloe is unduly worn the permanent band should be removed and it should be noted whether or not the spoke tenon extends clear through the felloe with its end resting against the band. If properly designed it would be of sufficient length to do this, thereby taking some of the binding pressure off the shoulders. Where the tenon does not so extend plugs should be inserted to fill up the space to the band.

Looseness of the Spokes at the Hub

Where there is a tendency for the spokes and felloe to draw away from the hub allowing undue looseness at this central point, one of the two following remedies may be applied to advantage. If the play is not considerable, the method of cutting between the ends of the felloe segments inserting a shim between the felloe and the steel band and reshrinking may be employed. The hub should first be removed which will allow the ends of the spokes to be brought closer together in the center. This reduced circular opening is then rebored to fit the hub, when necessary. The looseness is often noticeable between the mitre of the spokes at the center although the ends may rest firmly on the hub. When this means of repair is used, it is often necessary to rebore the spoke for the hub flange and break band bolts. . . .

Of the three types of manuals recognized in this paper, the company's General Handbook for Employees is undoubtedly the most widely used, and the Detailed Performance Instructions least. The reason for this may be attributed to the fact that the handbook is general in nature and easy to prepare, while the detailed performance instructions are explicit and their preparation requires much time and study.

The manual of procedure occupies the position midway between these two extremes. It can be used in any sort of an organization, and it can be worked out before the department has been completely standardized. It takes what the department has in the way of procedures or standards and records them, usually, however, making improvements in the course of the process.

The adoption of the manual principle and a start in its preparation are steps in the direction of standardization, and the use of the manual in the everyday work of the company secures in part the advantages of standardization.

BUSINESS ARCHIVE RECORDS

BY WM. EDWIN KASTENDIKE *

THE matter of filing and storing the completed or dead records, books of account, vouchers, and correspondence in a large business of much detail is one to which careful consideration must be given if such records are to be available for ready reference when conditions develop requiring their prompt production.

In many enterprises little or no provision is made for adequate space for the storage of old records. The preparation for filing, when removed from the active files or records, is intrusted to boys or minor clerks who are without appreciation of how vitally important such records may prove to be. As a result, these records may be filed under one title at one time, and under some other title when the next lot is prepared for the archives, which means that when they are wanted they cannot be found. This is only one of the many inefficient results where an untrained clerk is permitted to perform this important service without proper supervision.

Faulty, indifferent, ignorant work in this matter has cost many an enterprise thousands of dollars in individual cases, when it has been necessary to establish a case against a delinquent debtor, or defend an unjust claim.

The plan here outlined, if intelligently carried out, will prove effective and thoroughly satisfactory in making the old records of a large business available for ready reference:

1. Space. See that adequate room for this purpose is provided, and added to from time to time. Do not wait until the allotted space is overcrowded and so badly congested that records cannot be properly located when sent to the archives.

Shelving or bins should be installed and arranged in a manner to permit ready access to any record on file. Each floor of the building used for this purpose should have a number, each section of shelving or bins on each floor a letter, and each shelf or bin in each section a number.

2. Titles of Records. Each department should make up a list of standardized titles for all of its records. After these departmental lists have been verified and approved by your auditor or chief accounting officer, furnish each department with a copy of this approved list. Then when any of their bound books of account, loose-leaf records, or vouchers are to be removed to your archives, they can be properly prepared for filing under their respective standardized titles. It is important that loose-leaf sheets, vouchers, etc., be put in suitable containers, provided for the purpose, or properly wrapped.

Each book, container, or package sent to the archives should be properly labeled and accompanied by an index card made out in triplicate. (See Figures 1 and 2.) The original card is to be signed and returned by the archives clerk when the records are delivered to him. When the permanent location of the record has been determined the archives clerk will immediately enter this information on the duplicate and triplicate cards. The duplicate card will be filed in the archive departmental file, and the triplicate will be returned with complete information to the de-

* With the Guaranty Trust Company of New York, New York City.

ARCHIVES DEPARTMENT

TITLE

DEPT.	LOCATION
DIV.	FLOOR
NO.	SECTION
DATE	BIN

Figure 1. Printed Label to Be Used on Books, Containers, and Packages

TITLE

DEPT.			
DIV.			
NO.	CHANGE OF LOCATION		
DATE	FROM	TO	DATE
LOCATION			
FLOOR			
SECTION			
BIN	*Original*		

Prepared By Authorized By
Received By Located By

Figure 2. Index Card to Be Made Out in Triplicate

partment from which it came originally. The additional information will be transferred to the original card which is then filed alphabetically while the triplicate card is filed numerically.

3. Requisitioning Records from the Archives. When a department requires records on file in the archives they will refer to their alphabetical file, make out a requisition, Figure 3, the duplicate of which is a receipt form, Figure 4, and send it to the archives. Without loss of time or effort, the record called for will be found in the location indicated on the requisition. The attached receipt form will be filed in the departmental requisition folder until the record is returned to the archives when its receipt form will be dated and signed by the archives clerk and returned to the proper department. Each department should maintain a folder for archive requisition receipts, which will enable them at any time

Mark "X" opposite department for which files or records are requisitioned.
(List of Depts.)

Other Dept.
(State Dept.)

REQUISITION

NO.

FOR FILES OR RECORDS

Give name or description of files or records wanted

NO.
LOCATION

FLOOR

SECTION
BIN

Name of Department	Requested by

All requests must be made on this form and signed by a responsible person

Figure 3. Requisition Form for Record on File in the Archives

Mark "X" opposite department for which files or records are requisitioned. (List of Depts.) Other Dept. (State Dept.)	REQUISITION NO. RECEIPT FOR FILES OR RECORDS RET'D TO ARCHIVES Name or description of files or records returned NO. LOCATION FLOOR SECTION BIN Name of Department / Received By ARCHIVES

FIGURE 4. DUPLICATE OF REQUISITION WHICH IS A RECEIPT FORM

to show delivery to the archives of all records they have called for and subsequently returned.

When the archives delivers a record to a department on a requisition, they will fill out and place in their index file an "Out Card," Figure 5, which will remain there until the record is returned and its requisition delivered to the department for the return of the record.

Should a department requisition call for only a part of the records in any one container or package, the archives will use a rubber stamp on such records, Figure 6, which will insure the return of the document or documents so stamped to their proper place.

4. Change of Location of Archive Records. If it becomes necessary to change the location of any records in the archives, a Change of Location Slip will be filled out in duplicate, notifying the department interested to change its index cards accordingly. This department should retain and file the original card, and date, and sign, and return to the archives the duplicate, Figure 7.

The best system that was ever devised for any purpose was not, and

OUT

DEPT.
DIV.
NO.
REQ. NO.
DATE
TAKEN BY

FIGURE 5. OUT CARD, PLACED IN FILE WHEN RECORD IS OUT

ARCHIVES DEPARTMENT	
DEPT. DIV. NO. DATE REQ. NO.	LOCATION FLOOR SECTION BIN

FIGURE 6. RUBBER STAMP TO BE USED ON THE DOCUMENTS REMOVED FROM A CONTAINER

ARCHIVES—CHANGE OF LOCATION

NO.	
DEPT.	
DIV.	
NO.	
DATE	*CHANGED TO* DATE__________
LOCATION	LOCATION
FLOOR	FLOOR
SECTION	SECTION
BIN	BIN

KINDLY CORRECT YOUR RECORDS, SIGN AND RETURN THIS DUPLICATE ADVICE

____________________ ARCHIVES

PREPARED BY CORRECTION MADE BY

____________________ DEPT.

Figure 7. Card Showing Change of Location of Archive Records

cannot be automatic—self-workable. Any system for any purpose, to be effective, must be executed with a degree of intelligence and adequate experience. Given these essential adjuncts, this system will be found efficient and satisfactory and your records will always be found when you have need of them.

FIXED PROPERTY ACCOUNTING

BY ANTHONY B. MANNING *

PART I—CLASSIFICATION OF ACCOUNTS

ONE of the divisions of a balance sheet which invariably amounts to a very large percentage of the total net assets, especially in a large manufacturing corporation, is "fixed property," and generally no proper accounting supports in subsidiary records, other than the subordinate ledger accounts, are available which would enable an auditor to satisfy himself as to the physical existence of each unit, the original cost-plus installation charges, the accrued depreciation to date, etc.

The general ledger ordinarily contains a record of the expenditures in one or more accounts, which can be analyzed to satisfy anyone as to the correctness of the entries therein, but it is impossible to use these data to satisfy oneself of:

1. The physical existence of each unit.
2. That only one installation charge has been capitalized.
3. That replacements, renewals, repairs, and the like have been properly taken care of.
4. That the depreciation written off to date has neither been excessive nor insufficient.

All of these are necessary and vital to an auditor when called upon to certify to a balance sheet especially when a detail audit is not requested by the client.

When we stop to consider how well the current assets in the general ledger are supported is it any wonder why we cannot understand the inconsistency when confronted with the lack of supporting detail in connection with fixed property?

The cash balance at the end of the month or at any time can be verified by actual count, if it was necessary to draw the actual funds from the bank; the Accounts Receivable account can be supported by a detail list of customers and the balance due from each, and can be further supported by a detail statement of the invoices in connection therewith, if necessary. Notes receivable can actually be seen, if not discounted, but if discounted the bank can render satisfactory proof that the notes actually exist. Similarly with inventories, investments, etc., but why not fixed property?

Should the purchase of a milling machine be treated any differently than a carload of steel? In the former case the charge is made to the Machinery account and as a rule goes no further but in the case of the steel the charge is not only made to the Raw Material Control account but is further recorded in the store's detail records showing the quantity, kind, and value of the purchase and the location of the stock.

With this record controlled by the Raw Material account in the general ledger it is possible to make an actual count of the stock, verify the stores record, which in turn supports the general ledger account, or the auditor after inspecting the detailed ledger accounts can make several tests to satisfy himself as to the accuracy of the book inventory; but why are all these records maintained in connection with the steel and not with the milling machine? Is

* Member of the American Institute of Accountants and of the National Association of Cost Accountants.

it because a proper system of cost accounting is in operation and a control of the raw material is a necessary procedure? If so how can depreciation be properly included in the departmental cost of the component parts of the finished commodity unless the whereabouts or the location of the elements of fixed property are known and the depreciation on such elements applied to the product of that location, shop, or department?

Apart from the many accounting benefits to be derived from records of this kind in connection with fixed property, there is also another important phase which cannot be overlooked, and that is the value of such detail records showing the value of each kind of fixed property by locations, shops, or departments for fire adjusting purposes. What is left after a fire can very readily be appraised but the original cost value, less accrued depreciation to date, of what was there before the fire occurred must be a matter of record for that particular location, shop, or department exclusive of any other location, shop, or department.

During the Great War when so many plants were engaged on government cost-plus contracts as well as flat-price contracts, in addition to the company's own product or production for other governments, it was very necessary that depreciation be computed by shops, or departments so that the cost-plus contracts would only be burdened with the proper proportion applicable to such shops or departments that were engaged on that class of contracts.

To properly instal a system to produce the results advocated, it is first necessary to lay out a well determined classification, establish rates and methods of computing depreciation, and to analyze the existing ledger accounts in detail and apply such analysis to the new records.

II

When setting up a classification of fixed property, the main thing to be borne in mind, outside of the separation of different kinds of property to be classified is the normal life of the property, so that two or more similar elements carrying different rates of depreciation will not be found in the same class. For this reason a general classification will be necessary, properly subdivided, and normal depreciation rates set against each subdivision. As the subject of normal rates of depreciation is not only a lengthy one but an important one, it is advisable to discuss it separately, so that the following classification will not contain the rates as mentioned above as the general practice.

The classification submitted in this work is made somewhat extensive, as compared with classifications used in some plants, so that it can better illustrate the purpose to be accomplished.

Assuming that the general ledger asset accounts are symbolized in alphabetical order according to the arrangement of the balance sheet, that letter "E" was assigned to the Plant and Machinery account and the subordinate ledger accounts lettered in alphabetical sequence, starting with letter "A," then a complete classification could be laid out as on page 761.

When capital has been invested in Real Estate (EA) the manufacturing cost cannot be burdened with expenses outside of the manufacturing activities. Corporations occasionally purchase adjacent Land and Dwellings for many reasons, sometimes for investment with a view to future expansion, other times to offset complaints and subsequent law suits, as the manufacture of their product may be hazardous or objectionable, but in any case where the property so purchased is for a purpose

CLASSIFICATION CHART

Accounting Dept.	Fixed Asset Dept.
General Ledger Account	
(E) Plant and Machinery	
Subordinate Ledger Accounts	
(EA) Real Estate	(EAA) Investment Land
	(EAB) Dwellings
	(EBA) Land
(EB) Plant Land	(EBB) Land Improvements
	(EB1B) Fences
	(EB2B) Railings
	(EB3B) Sidewalks
	(EB4B) Grading
(EC) Buildings	(ECA) Concrete
	(ECB) Steel and Tile
	(ECC) Brick and Steel
	(ECD) Brick and Wood
	(ECE) Steel and Corrugated Iron
	(ECF) Wood Structures—Well Built
	(ECG) " " —Cheap
	(ECH) Scrap Bins, Sheds, etc.
	(ECJ) Bridges
	(ECK) Tanks—Outside of Buildings
(ED) Building Equipment	(EDA) Inside Piping
	(EDB) Inside Wiring
	(EDC) Lighting Fixtures and Accessories
	(EDD) Heating System (Radiation)
	(EDE) Ventilating and Air-Purifying
	(EDF) Lavatories
	(EDG) Sprinkler System
	(EDH) Elevators
	(EDJ) Partitions and Railings
	(EDK) Fire Protection Apparatus
	(EDL) Drinking Fountains
(EE) Machinery	(EEA) Abrading Machinery
	(EE1A) Filing Machines
	(EE2A) Grinding Machines
	(EE3A) Polishing Machines
	(EEB) Slitting Machines
	(EE1B) Shearing Machines
	(EE2B) Sawing Machines
	(EEC) Cutting Machines
	(EE1C) Boring Machines
	(EE2C) Drilling Machines
	(EE3C) Reaming Machines
	(EE4C) Countersinking Machines
	(EE5C) Profiling Machines
	(EE6C) Grooving Machines
	(EE7C) Lathes
	(EE8C) Milling Machines
	(EE9C) Tapping Machines

(EE) Machinery—(*Continued*)

- (EE10C) Splining Machines
- (EE11C) Trimming Machines
- (EE12C) Burring Machines

(EED) Cleaning Machines
- (EE1D) Wood Tumbling Barrels
- (EE2D) Steel " "
- (EE3D) Wire " "

(EEE) Presses
- (EE1E) Forming Presses
- (EE2E) Piercing Presses
- (EE3E) Printing Presses
- (EE4E) Stamping Presses
- (EE5E) Reducing Presses
- (EE6E) Straightening Presses
- (EE7E) Punching Presses
- (EE8E) Label-Stamping Presses
- (EE9E) Nailing Presses

(EEF) Reciprocating Machines
- (EE1F) Broaching Machines
- (EE2F) Key-Seating Machines
- (EE3F) Splining Machines
- (EE4F) Planing Machines
- (EE5F) Shaping Machines
- (EE6F) Slotting Machines

(EEG) Striking Machines
- (EE1G) Forging Machines
- (EE2G) Riveting Machines
- (EE3G) Steam Hammers
- (EE4G) Stamping Hammers

(EEH) Special Machines
- (EE1H)
- (EE2H) (each kind and type)
- (EE3H)

(EEJ) Miscellaneous Machinery
- (EE1J) Assembling Machines
- (EE2J) Sand-Blasting Machines
- (EE3J) Labeling Machines
- (EE4J) Box-Making Machines
- (EE5J) Paper-Working Machines

(EF) Fixed Equipment

- (EFA) Annealing Furnaces
- (EFB) Heat-Treating Furnaces
- (EFC) Pit Furnaces
- (EFD) Melting Furnaces
- (EFE) Forges
- (EFF) Cranes
- (EFG) Hoists
- (EFH) Trolleys
- (EFJ) Conveyors
- (EFK) Platform-Beam Scales (Fixed)
- (EFL) Main Line Shafting and Harness Work
- (EFM) Belting
- (EFN) Exhaust System
- (EFO) Dust-Collecting System
- (EFP) Oil-Distributing System

(EF) Fixed Equipment—(*Continued*)	(EFQ) Filtering System
	(EFR) Pumps
	(EFS) Tanks-Process
(EG) Power Plant Equipment	(EGA) Steam Plant Equipment
	(EG1A) Boilers
	(EG2A) Condensers
	(EG3A) Mechanical Stokers
	(EG4A) Coal Hoppers
	(EG5A) Turbines
	(EG6A) Feed-Water Heaters
	(EG7A) Economizers
	(EG8A) Stacks—Brick
	(EG9A) " —Metal
	(EGB) Electrical Plant Equipment
	(EG1B) Generators
	(EG2B) Dynamos
	(EG3B) Engines
	(EG4B) Transformers
	(EG5B) Switchboards
	(EG6B) Motors
	(EG7B) Transmission Lines
	(EG8B) Transmission-Line Towers
	(EGC) Gas Plant Equipment
	(EG1C) Gas Producers
	(EG2C) Coal Hoppers
	(EG3C) Gas Containers
(EH) Office Equipment	(EHA) Desks, Chairs, and Tables
	(EHB) Sectional Filing Cabinets—Wood
	(EHC) " " " —Metal
	(EHD) Mechanical Equipment
	(EH1D) Adding Machines
	(EH2D) Billing Machines
	(EH3D) Comptometers
	(EH4D) Other Calculating Machines
	(EH5D) Duplicators
	(EH6D) Typewriters
	(EH7D) Dictaphones
	(EH8D) Blue-Printing Machines
	(EHE) Lockers
	(EHF) Desk Filing Cabinets—Wood
	(EHG) " " " —Metal
(EJ) Transportation Equipment	(EJA) Automobiles—Passenger Cars
	(EJB) " —Trucks
	(EJC) Horses
	(EJD) Wagons
	(EJE) Electric Trucks—Road
	(EJF) " " —Interdep't.
(EK) Miscellaneous Equipment	(EKA) Benches
	(EKB) Stands
	(EKC) Racks
	(EKD) Inspection Tables

(EK) Miscellaneous Equipment—(*Continued*)
(EKE) Hand Trucks
(EKF) Transveyors
(EKG) Scales—Movable
(EKH) Laboratory Equipment

(EL) Underground Piping and Tunnels
(ELA) Sewers
(ELB) Water Mains
(ELC) Gas Mains
(ELD) Conduits
(ELE) Tunnels

other than manufacturing, the upkeep expenses including depreciation should not be charged to the product. For this reason Land and Dwellings not purchased for manufacturing should in all cases be separated from Plant Land and Buildings.

If a fixed sum is paid for a piece of property including the dwellings the purchase should be separated so that the Investment Land (EAA) can be recorded on the asset records separately from the Dwellings (EAB) as the latter is subject to depreciation, while the former is more liable to appreciation, and it is not considered good accounting to compute depreciation on land.

Under this heading Land (EBA) should be included the original cost of the land supported by the details showing each parcel acquired, from whom it was purchased, the date recorded, the volume and folio of the city record; also a convenient confidential file should be kept preferably in the treasurer's office, with the deed to each parcel of land acquired so that the same will be accessible when required by an auditor. A map, chart, or blue-print of the land showing each parcel properly numbered to correspond with the deed and with the city record is also useful and should be on file with the deeds.

As stated under Real Estate (EA) depreciation is very seldom computed on land and for that reason all expenditures for Fences (EB1B), Railings (EB2B), Sidewalks (EB3B), Grading (EB4B), etc., should be included under Land Improvements and subject to depreciation.

That part of the land which the buildings occupy, or which is necessary to the proper working of the plant, should be kept by itself in Plant Land. As part of the plant, land may be charged at the time of acquisition, not only with the cost of purchase, but with all the expenses incident thereto, such as title searching and insuring, commissions to real estate agents, recording of deeds, etc. After it has been acquired, and until operations have begun, it can be charged with interest on the purchase money mortgage (or any other obligation incurred in its acquisition) and with the cost of fencing, erecting gates and approaches, filling in, draining, leveling, etc., incident to the erection of the plant. As soon, however, as the plant has begun operations, the value of the plant land can only be increased by the cost of such improvements as enhance the efficiency of the buildings erected thereon, or increase their useful life by remedying conditions which tend to make the structures deteriorate faster than might reasonably be expected. The question of cost of improvements which tend to make plant land more valuable for any purpose other than the one for which it was acquired, while admittedly important in determining its cost if a sale is contemplated, should not be permitted to influence the appraisal of the values for the purpose of a going concern.[1]

A clear distinction must be made between the value or cost of the buildings (EC) Building Equipment (ED) and Fixed Equipment (EF). Too often do we find elements other than build-

[1] "Applied Theory of Accounts," page 222.

ings included in the Building account, and considering the low rate of depreciation applicable to buildings as against the much higher rate on other classes of fixed property the misleading results can be readily appreciated.

The building value should include:

1. All preliminary expenses, such as permits, surveying architect's fees, engineering staff expense, etc.
2. Taking down existing structures (less salvage)
3. Excavation cost
4. Foundation cost
5. Superstructure cost

Under the superstructure cost should be included windows, window mechanical devices, doors and appliances, staircases, flooring, etc., but elevators, partitions, inside piping and wiring, heating, and ventilating systems, etc., should not be included as these would more properly come under the heading of Building Equipment (ED).

If a piece of property is purchased for a fixed sum to be used in its then condition and the purchase money includes the land, buildings, and other equipment, an appraisal will be necessary so that the value of each element together with the supporting details will be available, properly classified, the accrued depreciation correctly figured, and all applied to the proper location.

Buildings are classified according to the different types of construction as the estimated life, which is generally the basis for the rate of depreciation, varies with each type. Most plants separate the buildings into concrete, brick, permanent wood and temporary wood structures, and while this classification may meet the conditions in most plants yet there are other types such as steel and tile, brick and steel, steel frame and corrugated iron walls, etc., but as very few plants have buildings of all types of construction a classification which will group all similar types together will suffice.

Confusion is often experienced in determining what should be included under the heading of Building Equipment (ED), but this confusion is generally cleared away when the function of the building is considered. The chief function of a building is protection from the natural elements—wind, storms, etc.—or housing, and in carrying out this function it is necessary to equip it in such a way that proper and suitable quarters are available. This service consists of light, heat, ventilation, sanitation, protection from fire, conveniences, etc., so that any equipment that is connected with this service should be classified as Building Equipment, but if the equipment is connected with the work or the manufacturing activities in the building it should be classified under other headings as will be explained later.

Machinery (EE) is another account that is often burdened with unnecessary elements or values that have no connection with machinery at all, due chiefly to the fact that it is generally left to the accounting department to symbolize or classify the expenditures. How often has this expression been heard: "Oh! charge it to machinery, that is about as good as any. Nobody ever analyzes that account anyhow and if they did they would have some job." What better reason would we want for a well-defined classification of fixed property and the supporting details in connection therewith?

The trouble generally occurs in the case of attachments and accessories to a machine. Some attachments are for the purpose of enabling the machine to perform different operations or the same operation at a higher speed. To illustrate, take a No. 2 B & S Automatic Verticle Feed Milling Machine. When a machine of this type is pur-

chased it would in ninety-nine times out of a hundred be classified as a machine and correctly so, but later on a greater efficiency is required and a No. 1 High Speed Milling Attachment is purchased, which consists of a "bracket clamped to the face of the column and an internal gear screwed on to the machine spindle that meshes with a pinion upon the spindle of the attachment." How would this attachment be classified? It would all depend on the technical knowledge of the person classifying the expenditure for such attachment and how the invoice described it. It is an addition to the machine and forms a component part of the same in performing a given operation and as such should be classified as machinery.

Again we find a special attachment made for use in connection with a machine or operation and upon inquiry we are informed that the function of such attachment is to hold the work upon which the operation is to be performed and forms no actual part in the operation other than to hold the work. Such attachments may be included under the heading of Fixtures in the group of tools, fixtures and gauges and the like, although in some classifications where a separate division is made for machinery equipment it may be included thereunder.

The machinery in the classification chart has been separated into eight general groups and subdivided into the components of each group. The general groups are as follows:

(EEA) Abrading Machinery
(EEB) Slitting Machinery
(EEC) Cutting Machinery
(EED) Cleaning Machinery
(EEE) Presses
(EEF) Reciprocating Machinery
(EEG) Striking Machinery
(EEH) Special Machinery
(EEJ) Miscellaneous Machinery

Under the heading Abrading Machinery (EEA) are included machines which remove material from the surface of the work by abrasion or rubbing. Filing Machines (EE1A), Grinding Machines (EE2A), Polishing Machines (EE3A), etc., are samples of this class of machinery.

Machines equipped with a knife blade, or rotary dies which divide the material into parts such as Shearing Machines (EE1B) and Sawing Machines (EE2B) are illustrations of Slitting Machinery (EEB).

Machines which remove material in performing the operation or process by means of stationary tools and moving work or moving tools and stationary work, are generally classified as Cutting Machinery (EEC). Boring Machines (EE1C) and Drilling Machines (EE2C) are samples of this class of machines.

Cleaning Machines (EED) must not be confused with Polishing Machines (EE3A). Machines which clean by tumbling or a rotary motion of the container are classified as Cleaning Machines.

Machines which perform an operation by exerting a gradual pressure continuously applied, such as Forming Presses (EE1E), Punching Presses (EE2E), Straightening Presses (EE3E), etc., are included under the heading Pressing Machinery (EEE) but it does not include hammers, riveting machines, and the like, which are classified under Striking Machines (EEG).

Machines which remove material from the surface of the work by a reciprocating or backward and forward motion such as Broaching Machines (EE1F), Key-Seating Machines (EE2F), Planing Machines (EE3F), etc., are types of Reciprocating Machinery (EEF).

Machines which exert a suddenly applied force on the material in per-

forming the required operation such as Drop Forge Hammers (EE1G), Riveting Machines (EE2G), etc., are illustrations of Striking Machinery (EEG). The methods of performing the operation on these machines are directly opposite to the machines which apply a gradual force and which are classified under Pressing Machines (EEE). It is the element of vibration which must be considered when setting the depreciation rates both on these machines and on the building they are in.

In the classification of the foregoing groups it will be noted that only standard machinery has been discussed but in addition to the regular standard machinery there are always machines peculiar to a particular product. In the manufacture of stationary boilers of the B. & W. type special staggering presses are used which turn a long narrow steel box into a long zigzag-shaped box that is used as a header. In like manner there are the special paper-making machines in paper mills, special cupping, swaging, and reducing presses in the cartridge manufacturing business, distilling machinery and equipment in chemical plants, and so with many other lines of manufacturing, but care should be exercised so that the proper classification will be given each kind of machine even though it is necessary to create a new group.

While it is safe to have a group heading for Miscellaneous Machinery (EEJ) yet it leads to all kinds of trouble if there is no definite subdivision provided and above all it should never be permitted to have a miscellaneous heading as a component of a subdivision, otherwise it will be found that later on there will be more elements included in this subdivision than in any other part of the classification. In other words it will develop into what is sometimes called a "sewer" or a "dumping ground."

Once it is determined that a unit should be classified as a machine, the next step is to find out what kind of work it does and how the function is performed disregarding the name of the unit entirely. Stamping machines are called presses as often as they are called machines and the word "press" would influence one to classify the unit as a press; but when it is known that the machine exerts a sudden striking motion in performing its function or operation instead of a gradual force, it is easy to recall the proper classification, that is Striking Machine (EEG).

III

In this classification we consider a unit a machine when it performs a definite productive operation or process. Any other unit that in any way assists the machine in performing that function should be classified under a different heading. In the matter of tools, fixtures, gauges and elements of like nature, a study should be made in each particular instance to determine whether the unit under consideration is a part of the machine proper or a tool, fixture, or a gauge. Much confusion arises with castings made for holding work, as for instance on planing machines. The vendor's invoice will generally call for "Castings as per B–P (blue-print) No. XXX" and the blue-print in question should be referred to and the nature of the casting determined.

Under the heading of Fixed Equipment (EE) should be included equipment, other than machinery, permanently fixed to the building and used in connection with the manufacturing of the product, but does not include the elements under the heading of Building Equipment or equipment used for the production or transmission of energy as shown under the heading of Power

Equipment (EG). A reference made to the elements under the heading of Fixed Equipment in the classification will give an idea of what is to be included under this group, without any further explanation.

All equipment used for the purpose of changing energy from one form to another or for the purpose of transmitting energy, together with the necessary accessories, should be classified as Power Equipment (EG) as a general class and subdivided as to Steam Plant Equipment, Electric Plant Equipment, and Gas Plant Equipment. These subclassifications are again divided into their respective elements as shown on the classification herewith.

In most classifications the Office Equipment (EH) is generally termed Furniture and Fixtures, preserving a title that has been in use for years but today, in the modern office, there are so many mechanical devices such as adding machines, billing machines, calculating machines, duplicators, etc., that this term has given away to Office Equipment. Under this heading, as the name implies, is included the equipment necessary to operate an office such as desks, chairs, tables, cabinets, etc., in addition to the mechanical devices mentioned above.

All equipment used for the purpose of transportation is included under the heading Transportation Equipment (EJ). Such elements as hand trucks, transveyors, and the like, principally used for carting of components from process to process and to finished stores should not be classified under this heading as it is better to consider these latter elements as coming under Miscellaneous Equipment (EK). From the classification shown herewith it can be seen that such elements of fixed property as automobiles, auto trucks, trailers, motor-driven trucks, horses, wagons, sweeping and watering carts, etc., are the elements referred to.

The classification of Miscellaneous Equipment (EK) should not be confused with the subclassification of machinery, Miscellaneous Machinery (EEJ) under the heading of Machinery (EE), and what has been said under Miscellaneous Machinery (EEJ) regarding a definite classification for each element may be reviewed here with profit, but in any case never permit a classification to contain a miscellaneous division as a component of a subclassification; always have a definite place for every unit in the analysis.

Underground Piping and Tunnels (EL) are at times classified as Buildings, other times as Miscellaneous Equipment. Steam Lines are ofttimes included with the Steam Plant Equipment, but it is better to collect all these similar elements in a separate group as the conditions affecting their life are practically the same. Under this heading should be included steam lines, water lines, gas mains, conduits and special tunnels built for these mains, but the Inside Piping (EDA) installed throughout the building should not be included.

IV

The classification on page 769 is for the purpose of illustrating the subject, but it must be considered that like many other accounting subjects there are more ways than one to accomplish the same purpose, all dependent on the existing conditions. Any classification that keeps all the same elements in one group properly subdivided, so that each unit or kind of unit can be identified by a specific symbol for that particular kind of asset, will accomplish the desired results. In view of this fact it may be well to compare the following classifications in use in plants manufacturing different products.

CLASSIFICATION
ADOPTED BY AN AIRCRAFT CORPORATION

1. Land

2. Buildings
    - 2–a. Permanent Factory
        - 2–a–1. Steel and Concrete Construction
        - 2–a–2. Slow-Burning Mill Construction
    - 2–b. Frame and Temporary Factory
        - 2–b–1. Substantial Wooden Buildings
        - 2–b–2. Sheds
    - 2–c. Other than Factory (Dwellings)
    - 2–d. Building Equipment
        - 2–d–1. Lighting
        - 2–d–2. Heating
        - 2–d–3. Plumbing
        - 2–d–4. Sprinkler System
        - 2–d–5. Miscellaneous

3. Factory Equipment
    - 3–a. Power Transmission
        - 3–a–1. Shafting and Fittings
        - 3–a–2. Wooden Pulleys
        - 3–a–3. Metal Pulleys
        - 3–a–4. Belting
    - 3–b. Piping and Fittings (Industrial)
    - 3–c. Factory Furniture and Fixtures
        - 3–c–1. Wooden Bins and Shelving
        - 3–c–2. Metal Bins and Shelving
        - 3–c–3. Concrete Bins and Shelving
        - 3–c–4. Wooden Benches, Stands, and Tables
        - 3–c–5. Metal Benches, Stands, and Tables
        - 3–c–6. Wooden Racks
        - 3–c–7. Metal Racks
        - 3–c–8. Wooden Lockers
        - 3–c–9. Metal Lockers
        - 3–c–10. Miscellaneous Factory Equipment, Including Portable Scales, Portable Hoists, Water Heaters, Glue-Pots, etc.
    - 3–d. Temporary Partitions
        - 3–d–1. Wooden Partitions
        - 3–d–2. Metal Partitions
    - 3–e. Tanks
        - 3–e–1. Wooden Tanks
        - 3–e–2. Metal Tanks
        - 3–e–3. Concrete Tanks
    - 3–f. Foundry Equipment
        - 3–f–1. Cranes and Hoists
        - 3–f–2. Core Ovens
        - 3–f–3. Core-Room Furniture and Fixtures
        - 3–f–4. Cleaning-Room Furniture and Fixtures
        - 3–f–5. Miscellaneous Foundry Equipment
    - 3–g. Safety Equipment
        - 3–g–1. Wooden Equipment
        - 3–g–2. Metal Equipment

4. Machinery Equipment
   - 4–a. Machinery in Service
     - 4–a–1. Lathes
     - 4–a–2. Milling Machines
     - 4–a–3. Punching Presses
     - 4–a–4. Drill Presses
     - 4–a–5. Boring Mills
     - 4–a–6. Planing Machines
     - 4–a–7. Screw Machines
     - 4–a–8. Woodworking Machinery
     - 4–a–9. Miscellaneous Machinery Equipment
   - 4–b. Machinery Out of Service
     - 4–b–1. Lathes
     - 4–b–2. Milling Machines
     - 4–b–3. Punching Presses
     - 4–b–4. Drill Presses
     - 4–b–5. Boring Mills
     - 4–b–6. Planing Machines
     - 4–b–7. Screw Machines
   - 4–b–8. Woodworking Machinery
     - 4–b–9. Miscellaneous Machinery Equipment
   - 4–c. Machinery in Foundry Service
     - 4–c–1. Sand Blast Machines
     - 4–c–2. Blowers and Piping
     - 4–c–3. Moulding Machines
     - 4–c–4. Grinding Machines
     - 4–c–5. Chipping Machines
     - 4–c–6. Misc. Machinery in Foundry Service
   - 4–d. Machinery Out of Foundry Service
     - 4–d–1. Sand Blast Machines
     - 4–d–2. Blowers and Piping
     - 4–d–3. Moulding Machines
     - 4–d–4. Grinding Machines
     - 4–d–5. Chipping Machines
     - 4–d–6. Miscellaneous Machinery Out of Foundry Service

5. Power Plant Equipment
   - 5–a. Steam Plant Equipment
   - 5–b. Electrical Plant Equipment
   - 5–c. Cranes and Hoists
   - 5–d. Miscellaneous Power Plant Equipment

6. Electrical Equipment
   - 6–a. Electrical Equipment in Service
     - 6–a–1. Motors, Starters, etc.
     - 6–a–2. Power Wiring, Switchboards, and Switches, etc.
   - 6–b. Electrical Equipment Not in Service
     - 6–b–1. Motors, Starters, etc.
     - 6–b–2. Power Wiring, Switchboards, and Switches, etc.

7. Heating and Melting Furnaces
   - 7–a. Other than in Foundry
     - 7–a–1. Soldering Furnaces

7–a–2. Melting Furnaces
7–a–3. Carburizing and Tempering Furnaces
7–a–4. Heating and Forge Furnaces
7–a–5. Miscellaneous
7–b. Furnaces in Foundry
7–b–1. Cupolas
7–b–2. Melting Furnaces
7–b–3. Melting Crucibles
7–b–4. Miscellaneous

8. Miscellaneous
8–a. Storeroom Equipment
8–b. Hand Trucks and Wheelbarrows
8–c. Tools and Tote Boxes, Trays, etc.
8–c–1. Wooden
8–c–2. Metal
8–d. Time Clock System
8–e. Company Cars and Trucks
8–e–1. Motor Trucks
8–e–2. Passenger Automobiles
8–e–3. Electrical Industrial Trucks
8–f. Cranes and Hoists
8–f–1. Traveling Cranes
8–f–2. Jib Cranes
8–f–3. Chain Hoists
8–f–4. Miscellaneous Hoists
8–g. Office Furniture and Fixtures
8–g–1. Desks, Tables, Chairs
8–g–2. Wooden File Cabinets and Shelving
8–g–3. Metal File Cabinets and Shelving
8–g–4. Typewriters
8–g–5. Calculating Machines
8–g–6. Miscellaneous Office Equipment
8–h. Fire Protection
8–h–1. Cisterns
8–h–2. Pipe Lines Underground in Yard
8–h–3. Pipe Lines Above Ground in Yard
8–h–4. Pumps
8–h–5. Water Tanks and Towers
8–h–6. Hose and Nozzles
8–h–7. Miscellaneous Pails, Barrels, etc.
8–j. Welfare and Hospital Equipment
8–k. Yard
8–k–1. Roads, Courts, and Paths
8–k–2. Fencing
8–k–3. Railway Sidings
8–k–4. Pipe Tunnels
8–k–5. Sewers (Sanitary and Drainage)
8–k–6. Yard Electrical Equipment (Above Ground)
8–k–7. " " " (Underground)
8–k–8. Pipe Lines Underground (Water and Steam)
8–k–9. Pipe Lines Above Ground (Water and Steam)
8–k–10. Miscellaneous

CLASSIFICATION ADOPTED BY A MANUFACTURING COMMITTEE IN 1917

A. Improvements to Real Estate and Grounds
  1. Above Ground
    (a) Fencing
      1. Wood
      2. Iron
      3. Wire
      4. Concrete Walls
      5. Brick Walls
    (b) Ornamental Improvements
    (c) Furniture and Apparatus
  2. Below Ground
    (a) Water Lines
    (b) Gas Lines
    (c) Air Lines
    (d) Steam Lines
    (e) Conduits
    (f) Tunnels

B. Buildings
  1. Frame Structures (All Wood)
  2. Brick and Timber (So-Called Slow-Burning)
  3. Reinforced Concrete
  4. Structural Steel Fireproofed (with Concrete)

C. Floors
  1. Hard Wood (According to Grade and Kind of Wood)
    (a) On a Rigid Base
    (b) On a Springy Base
  2. Plank
  3. Wood Blocks
  4. Concrete
  5. Asphalt
  6. Tile
  7. Brick
  8. Composition
    (a) On a Rigid Base
    (b) On a Springy Base
  9. Linoleum (According to Kind and Grade)

D. Material Handling Equipment
  1. Elevators
    (a) Electric
    (b) Hydraulic
    (c) Air Lift
      1. Passenger
      2. Freight
  2. Built-In Fixed Conveyors
    (a) Metal Chutes
    (b) Wood Chutes
    (c) Rollers
    (d) Belts
  3. Portable Conveyors
  4. Cranes
    (a) Electric
    (b) Air
    (c) Manual
  5. Monorails
    (a) Power
    (b) Hand
  6. Industrial Railways
    (a) Trackage
    (b) Tractors
    (c) Trailers
  7. Hand Trucks
    (a) All Wood—Except Wheels
    (b) Composite—Wood and Steel
  8. Motor Vehicles
    (a) Trucks
      1. Electric
      2. Gas
    (b) Passenger
    (c) Industrial Trucks

E. Processing Equipment
  1. High-Speed Standard Machinery
  2. Low-Speed " "
  3. High-Speed Special Machinery
  4. Low-Speed " "
  5. Special Processing Apparatus
  6. Fixtures

F. Driving Equipment
  1. Motors
    (a) Direct Current (D. C.)
    (b) Alternating Current (A. C.)
  2. Transformers
  3. Cables (Not Short Line Leads)
  4. Shafting and Pulleys
  5. Belting

G. Lighting Equipment
  1. Lamps
    (a) Bulbs
    (b) Arcs and Tubes
  2. Reflectors and Hangings

H. Auxiliary Equipment
  1. Tables (Wood and Steel)
  2. Benches " " "
  3. Chairs " " "
  4. Bins " " "

5. Railings (Wood and Steel)
6. Dispatching Equipment
7. Intercommunicating Equipment

J. Ventilating and Heating Equipment
1. Fans and Blowers
2. Piping (Exposed and Covered)

K. Power House Equipment
1. Coal and Ash Bins
2. Conveyors
3. Boilers and Setting
4. Mechanical Stokers
5. Stacks
   (a) Steel
   (b) Brick
   (c) Concrete
6. Auxiliaries
7. Steam Lines
8. Engines
9. Condensers
10. Gas Producers
11. Gas Containers
12. Gas Engines
13. Air Compressors
14. Pumps
15. Generators
16. Switchboard

L. Miscellaneous
1. Reservoirs
2. Tanks (Water)
   (a) Wood
   (b) Steel
   (c) Concrete
3. Process Tanks and Vats
4. Furnaces and Ovens
5. Bridges
   (a) Wood
   (b) Steel
   (c) Steel Fireproofed with Concrete
6. Laboratory Equipment
   (a) Chemical Apparatus
   (b) Physical Testing Apparatus
7. Inspecting Equipment
   (a) Micrometer Gauges
   (b) Limit Gauges and Templates
   (c) Miscellaneous Inspecting Equipment
8. Office Equipment
   (a) Dictaphones
   (b) Typewriters
   (c) Computing Machines
   (d) Tabulating Machines
   (e) Mimeographs and Multigraphs
   (f) Blue-Printing Machines
   (g) Filing Cabinets
      1. Wood
      2. Steel
   (h) Desks and Tables
      1. Wood
      2. Steel
   (i) Chairs
   (j) Drafting Tables
   (k) Auxiliary Devices

CLASSIFICATION ADOPTED BY A MANUFACTURING PLANT FOR THE PURPOSE OF COMPUTING DEPRECIATION CHARGEABLE TO UNITED STATES GOVERNMENT COST-PLUS CONTRACTS

Buildings
- Concrete
- Brick
- Wood
- Hose Reel and Police Houses
- Magazines (Powder Houses)

Building Equipment
- Heating and Ventilating Equipment
- Partitions
- Inside Piping
- Inside Wiring
- Toilet Equipment
- Sprinkler System
- Elevators
- Watchmen's System
- Fire Alarm System
- Fire Escapes and Ladders

Machinery
- Standard Machine Shop and Tool Department Machinery
- Special Machinery

Power Plant Equipment
- Gas Plant Equipment
- Electric Plant Equipment
- Steam Plant Equipment

Transportation Equipment
- Horses
- Wagons
- Automobiles

Underground Piping and Tunnels
- Gas Mains
- Water Mains
- Steam Mains
- Conduits
- Tunnels

Miscellaneous
- Shafting
- Belting
- Benches
- Fixed Kettles
- Fixed Tanks (Process Tanks)

CLASSIFICATION ADOPTED BY A MANUFACTURERS' COST COMMITTEE FOR THE PURPOSE OF COMPUTING DEPRECIATION APPLIED TO COST

Buildings and Accessories
- Reinforced Concrete
- Steel and Tile
- Brick and Steel with Non-Combustible Roof and Concrete Floors
- Brick, Steel, and Wood
- Brick and Wood
- Steel Frame, Wooden Roof, and Corrugated Iron Walls
- Steel Frame, Non-Combustible Roof, and Corrugated Walls
- Concrete Blocks with Wooden Roof and Floors
- All-Wood Structures, Well Built
- All-Wood Structures, Cheaply Built
- Sprinkler System
- Heating and Ventilating System
- Water and Sewer Piping and Sanitary Fixtures
- Tanks and Reservoirs, Steel
- Tanks and Reservoirs, Wood

Machinery and Large Equipment
- Boilers, Pumps, Feedwater Heaters, and Air Compressors
- Power Piping
- Switchboards, Main Wiring, and Conduits
- Engines and Dynamos
- Machines, Motors, Machine Tools, Traveling Cranes, etc.
- Punching Presses, Bending Rolls, Power Shears, and Drop Hammers
- Shafting, Pulleys, Hangers, and Belting
- Cupolas, Converters, Melting Furnaces, Ovens, Forges, etc.
- Motor Trucks
- Storage-Battery Locomotives
- Horses and Wagons
- Steel Shelving and Lockers

Furniture, Fixtures, and Miscellaneous Equipment
- Mechanical Appliances
- Departmental Wiring and Electrical Fixtures
- Miscellaneous Items

Miscellaneous Real Estate Improvements
- Pavements, Sidewalks, Fences, Retaining Walls, Roadways, Tracks, Yard Drainage, General Conduits, Tunnels, and Vaults

From the above classifications, it can be seen that there are many elements which are not definitely segregated, allowing the grouping of more than one kind of unit under a subclassification. While this may serve the purpose for which the particular classification was prepared or planned yet for a complete and proper record of fixed property for any and all purposes these accounts would have to be further analyzed to obtain the required data that should have been obtainable if a detailed classification was originally planned.

In any event, with a properly determined classification best suited to the property being classified, the next step is to analyze the existing ledger accounts accordingly, so that the result of such analysis can be applied to the asset records.

TRADE ASSOCIATIONS AND BUSINESS STATISTICS

BY ARTHUR R. BURNET*

STUDENTS of business are agreed that in the immediate future business statistics will occupy a larger and more important place than ever before. The old days of "hunch" and guess are over. In the face of world-wide changes, and an increasing tide of competition more and more facts are needed. The present-day emphasis on the elimination of waste in materials, time, and energy, is a summons to utilize what might be called the by-products of accounting. It is not enough that we should scrutinize the balance sheet to make sure that the records have been kept correctly, and that every cent has been accounted for. We should examine the sources of those accounts, discover ratios, trends, and tendencies—in short, estimate and measure all the forces, both internal and external, that are involved in our business.

The business executive today needs not only better accounting, but also better business research. He cannot expect to win merely by the willingness to manufacture and sell. He must know the conditions of manufacturing and selling. For him market and trade analyses are as important as obtaining raw material. He should be aware of the relation of his industry to others. He must find new markets, make changes in old products, and revise old methods to suit new conditions.

All of these things involve distinctly statistical functions because they require the analysis of accounting results, and the compilation and study of numerical data entirely outside of ordinary accounting records.

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It is fitting, therefore, that trade associations should play a large part in this new advance. Along with increased competition there has come a feeling of the need of co-operation, such as the trade association itself fosters. Many business enterprises are after all facing the same problems. What is more natural, in that case, than to seek light and help from others in the same industry? Already the trade association is supplying a considerable amount of co-operative statistical information. To increase this service, therefore, involves no new principle. The trade association is one of the most effective means for developing the highest grade of business intelligence. The United States Chamber of Commerce and other quasi-educational institutions are quick to use this means for promoting a wider use of cost accounting, business statistics, and other modern business facilities.

At the present time in the United States there are over 300 national associations, together with more than 3000 state, local, branch, or definitely connected minor groups. The rise of the trade association movement has been so gradual that comparatively few executives have a conception of the number of such associations, much less of the range of their activities. A dozen important functions usually performed by the individual manufacturer or merchant have been taken over by associations, which to an increasing extent are undertaking to perform for their members services which each separate business concern formerly took care of for itself.

The record of activities of a single as-

Table I. Composite Service Summary[1]

Departments	Total Service	Range of Monthly Service			Peak Month
		Average	Low	High	
Industrial Relations Bureau:					
Telephone Inquiries......	1971	219	112	405	May 1921
Letters & Interviews.....	1539	171	102	274	February 1921
Committee Meetings.....	140	16	3	39	October 1920
Labor Cases Pending.....	51	6	1	13	May 1921
Promotion and Publicity Bureau:					
Service Calls on Members	657	72	34	151	May 1921
Prospects Interviewed....	588	67	23	97	October 1920
New Members Secured...	137	17	4	41	September 1920
Credit and Collection Bureau:					
Number of Inquiries Answered............	1895	212	171	240	February 1921
Claims Filed for Collection	892	99	82	123	April 1921
Amounting to...........	$80,956.40	$8,995.16	$8,353.42	$15,187.21	March 1921
Claims Collected........	386	43	40	66	May 1921
Amounting to..........	$46,558.84	$5,173.21	$3,817.29	$11,949.85	September 1920
Cost Bureau:					
Service Calls (all classes)..	4467	496	352	632	May 1921
New Contracts Secured...	61	7	0	20	February 1921
Employment Bureau:					
Employees Registered....	898	100	57	138	December 1920
Calls for Workmen......	397	44	27	83	September 1920
Positions Filled..........	376	42	25	78	September 1920
Educational Bureau:					
Enrollment (7 classes)....		276	257	373	November 1920
Classes Held............	177	20	4	30	April 1921
Paper and Machinery Exchange Bureau:					
Paper Lots Listed.......	420	47	21	123	March 1921
Machinery Items Listed..	252	28	0	127	March 1921
Miscellaneous Service:					
Total Telephone Calls....	20341	2260	1828	2872	March 1921
Total Mail Matter Issued.	102061	11340	7147	14732	March 1921
Meetings Held:					
Bureau Committees......	85	9	2	16	October 1920
Board of Directors......	10	1	1	2	September 1920
Group Meetings.........	60	7	4	11	November 1920
Affiliated Organizations...	27	3	1	5	December 1920
Labor.................	137	15	7	39	October 1920
Educational............	177	20	4	30	April 1921
Total Meetings.......	496	55	19	103	

[1] Compiled by the Chief Clerk from Monthly Reports of the Executive Staff made to the Managing Director or the nine months, September 1920-May 1921.

sociation for a period of nine months covering the last four months of 1920, and the early part of 1921 is shown in Table I. It may be taken as typical of the wide variety of service which progressive trade associations offer their membership.

No direct reference has been made in this table to purely statistical work because in this particular association it has formed a subordinate part of the work of all the bureaus, and has been especially important in the Industrial Relations Bureau. Since the table was drawn up, however, a section of the association has begun to function as a clearly defined department, known as the Statistics and Trade Data Bureau. Statistical work may often be performed by one of the general departments until such a time arrives that the amount or the importance of the service is great enough to warrant specialized treatment.

II

Ideally, in a large association having a variety of activities, the statistical department should be a service bureau through which the technically statistical work of all the departments is handled. For example, suppose the association conducts standard cost-finding work through an individual department. In addition to the strictly cost accounting work the department is automatically collecting a great deal of information concerning material, labor, and overhead charges, the relation of profit to capital invested, or to turnover, etc. This and other material should be subjected to technical analysis, and the ratios, laws, and standards set forth and explained. This kind of work requires statistical skill. It hardly needs to be pointed out that an industrial relations bureau, dealing in wages, cost of living, budget studies, and various other technical matters stands in need of specialized statistical service.

One of the activities common to an increasing number of associations is the compilation and distribution to members of the fundamental statistics of the industry to which they belong. Such statistics are, for example, output and production data, shipments, unfilled orders, costs, sales, etc. The broad knowledge that results from having always available assembled figures from many sources, and covering a wide area has come to be recognized as an essential factor in planning the production, and in marketing the output of every well-regulated industry. The supplying of information for the purpose of forming a composite picture, and the use of this picture as a background against which to compare an individual business requires genuine co-operation between many persons, and it involves a definite and proper statistical function on the part of the trade association.

The statistical data used by trade associations come from four general sources as is suggested by the accompanying diagram (Figure 1). The smallest circle encloses the individual concerns, companies, or organizations which are collectively represented by a particular trade association. Of primary importance are the statistics of individual enterprises. Just outside the circle lies the zone of the general industry to which the individual concerns, by the very nature of their business, belong. Data from this source, though important, are secondary to those from within the circle. Then comes the zone of related industries, and finally, outside of all, business at large. A practical example of this fourfold division taken from the woolen business would be as shown in the following:

1. Individual woolen manufacturers (Comprising the National Association of Wool Manufacturers)
2. The textile industry
3. Dye, clothing, and other related industries
4. Business at large

A well-known American writer, using the illustration of the concentric rings caused by dropping a pebble into still water, pointed out that every individual is a center of influence radiating outward, and is in turn, affected in the opposite direction by his surroundings.

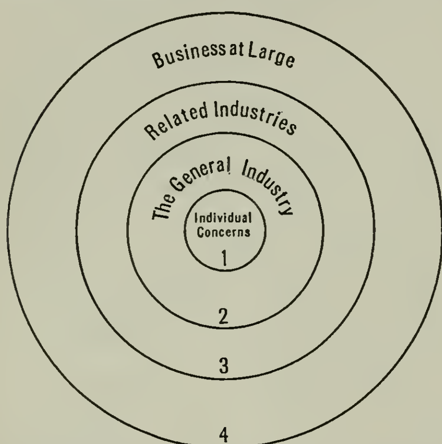

Figure 1. Chart Showing Sources of Statistical Data Used by Trade Associations

So also with individual business concerns. They help to produce the state or condition of the general industry to which they belong, and likewise they are vitally affected by the sum total of all industries. A given industry bears relations to others as a consumer of the finished products of those industries, or as the producer of raw material to be consumed by them. Sometimes it is a competitor in the same or a nearby field, as for example, cotton often is to wool or to silk. The individual enterprise also forms a small part of that vast, indeterminate thing which we call "business at large," and by which every component is vitally affected. We sometimes refer to it by the abstract term "conditions," thus giving expression to the feeling of vagueness and helplessness.

III

In describing the statistical data derived from these four sources it is not the purpose of this article to discuss each one exhaustively, but to point out the characteristics of each, and to pass in review a number of concrete illustrations of such data in chart form. The charts selected have been actually used by trade associations either in their regular work, or for special occasions, such as wage arbitration cases. The presentation and analysis of these charts is intended to show what representative associations are doing to secure and to distribute business information. It will also show that the graphic method is regarded as highly important in association work as a means of conveying quickly a large amount of statistical facts in easily assimilated form to a great number of persons. Many associations send regularly to their members, charts representing the combined figures of their membership. In the case of a few associations these charts are accompanied by the charted results of the individual members themselves, so that the individual member can compare graphically his own business with that of the total. In other cases the individual members plot their own charts, making them comparable relatively with the total charts sent out by the association. The member can then see at a glance whether he is keeping pace with the group or falling behind, and he can act accordingly.

At this point it may be asked: Why should an association be called upon to keep on file or to distribute statistics other than those based on the reports sent in by its members? To make a

composite of the business information of its members, it may be argued, is a proper function of the trade association, but why have anything to do with statistical data which it is not directly concerned in compiling, such as for example, statistics of outside industries or those reflecting general business conditions? There are several answers to this pertinent question:

1. Industrial negotiations and disputes with which trade associations are more and more concerned, involve economic problems whose roots are spread over a wide area. Therefore the facts of the local industry which the association is presumed to possess already, need to be supplemented by a large amount of outside data or external statistics.

2. Only a few of the very largest industrial companies or business enterprises represented in an association maintain competent statistical facilities for the thorough analysis, correct graphic presentation, or scientific application of the vast array of data that are now to be obtained from government at and outside commercial or trade sources. The interpretation of such data, and its application to a particular industry or business is one of the newer but not the least important functions of the trade association. Much of the disrepute in which government statistical reports stand today is due to a lack of understanding on the part of possible users of such information. Much benefit may be expected through the intelligent digestion and distribution of statistics by trade associations.

3. Statistical information from external sources is not always easily accessible. It often has to be culled from many and widely separated records. To separate the facts that are applicable to a given industry, and to bring them together is not only a convenience, but it results in a quicker and better use of those facts. For example, one of the important national associations reprints in bulletin form from the monthly customs reports the record of imports of the raw material with which it is directly concerned. This is done even though the government records are available to anyone who pays the small subscription price or steps into any public library. To single out a commodity, and to bring it to the attention of those interested is one of the services that this association is performing. Government reports should be regarded as source books rather than the final resting places of statistical information.

IV

It is axiomatic to say that no business can exist in an economic vacuum. All industries are to some degree interdependent. Therefore indices of general business conditions form a part of the trade association's fund of statistical information. In this connection the first thought is of the large resources of published government data, such as the census of population, the census of manufactures, the commerce reports, the reports of government departments and commissions, both federal and state, such as the Bureau of Labor Statistics, the Federal Trade Commission, and the New York State Industrial Commission. Every trade association should be on the mailing list of these and other public agencies.

Of what use to manufacturers or distributors are population statistics? Although it is a commonplace to say that the ultimate consumers of articles of commerce and manufacture are the men, women, and children who make up the total population, nevertheless the comparison of the growth of an industry with the increase of the population as a means of measurement is often overlooked by managing executives. As long as the production or sales are larger each succeeding year than the year before they are satisfied, whereas the truth may be that the business is merely being carried along on the rising tide of the population. To be pushed along or merely to keep up with the crowd is no reason for ascribing to ourselves any particular merit.

The chief concern of an executive should be to know the underlying facts of his business, and to understand the fundamental market, trade, or other economic conditions, by which it is affected. Only in this way can he apply remedies or introduce new methods wisely. If he knew that his business was growing merely at a rate approximating the rate of increase of the population he would be led to question whether his sales propaganda was sufficiently broad and intensive, and he

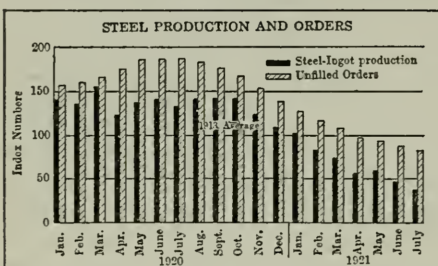

Figure 2. Chart Based on Index Numbers Comparing Unfilled Orders of United States Steel Corporation with Steel Ingot Production

would pursue his investigation until he found out where the fault lay.

The keeping up with or exceeding the population is a very interesting matter. Some years ago the present writer made a study of the rubber footwear industry which involved estimating the total volume of business in the country. When the results were plotted the curves closely paralleled the population line, showing that the industry in question was not advancing because of the "selling" of the idea of wearing rubber footwear, but simply because there were more people born each year whose feet needed protection. This was before the days when rubber-soled canvas shoes had attained their present popularity. Very probably since then the rubber footwear business has taken on new life—a point which the Rubber Association should be prepared to answer. Perhaps in view of improved pavements and better means of transportation it may be creditable merely to keep up with the population, but it is nevertheless true that in order to deserve real merit for exploitation, the results must accumulate faster than the population.

Official government publications supply far more than population figures in the way of material by which the trade association can measure the business which it represents. One of the most fruitful sources is *The Survey of Current Business* recently started by the Department of Commerce under the direction of Mr. Hoover. The subjects covered in *The Survey*, which is published monthly, are by no means new, but heretofore they have been practically inaccessible to all but a few persons because they were printed in so many widely separated publications. The supreme service that this new government report renders is that it brings together in one place a vast wealth of statistical information.

In the introduction to the first number (July, 1921) *The Survey* itself said:

> The basic figures used in the accompanying tables are largely those already in existence and are collected from government departments, trade associations, etc. . . . To be of the greatest value such information must be widely diffused and digested by the business men of the country. It is not enough that the banks and the big business concerns should understand the trends in business; the small manufacturer and the small dealer must have some understanding, too, so that there may be some semblance of unity in action. The department hopes to reach this audience by offering to them these data.

As is intimated in the quotation, *The Survey* contains numerical information from some of the associations themselves. Among the associations thus represented are the Silk Associa-

tion, the Rubber Association, the Motor Accessory Manufacturers' Association, the Tanners' Council, and about eight others. The information from the Rubber Association covers such subjects as production, stock, shipments of finished goods, and consumption of raw material. These are subdivided by classes of products, e.g., pneumatic tires, inner tubes, etc.

Placing side by side in a single volume the reports from these dozen trade associations provokes two reactions. The first is that a larger number of industries ought to be represented by their respective associations. It is to be regretted that nothing is given for printing and publishing, approximately the fifth largest industry in the country. If all the large and basic industries supplied monthly data, *The Survey* would become a wonderful means of keeping in close and current contact with the pulse of American industry. There is a real opportunity here for making actual what has up to this time been regarded as only ideally possible. This publication ought to prove to be a valuable supplement to the Census of Manufactures, which is taken only every five years, and the results of which are published long after the census year. The short span is needed with the long. The comparison between the two is like the comparison between hours and minutes, since *The Survey* is published monthly, and the Census of Manufactures appears every sixty months. This analogy is fanciful, of course, but it suggests the time relation between the two.

The second thought in connection with the appearance of trade association data in *The Survey* is this: How reasonable that information of this kind should be collected by associa-

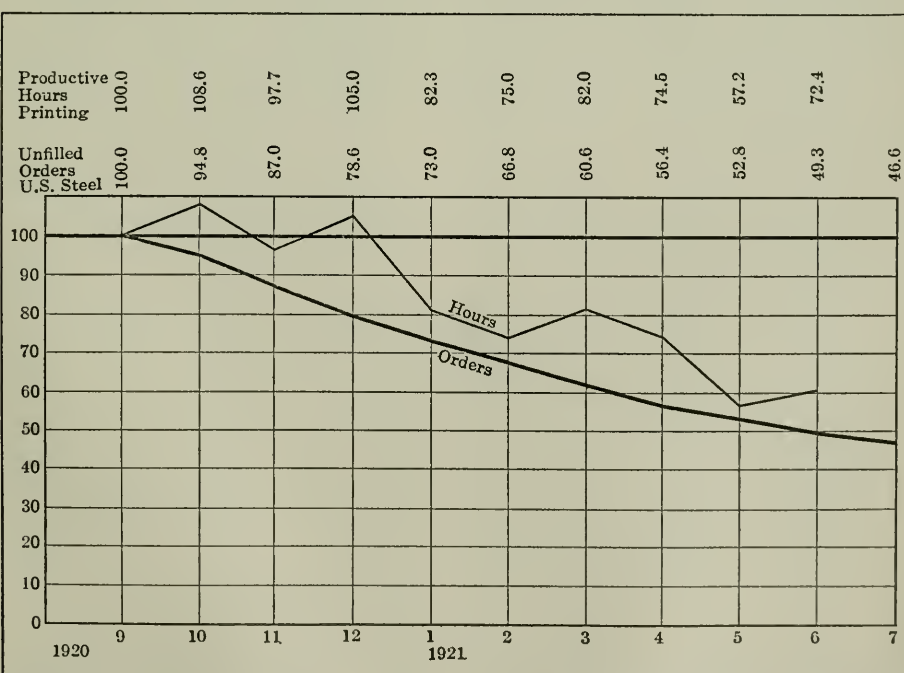

FIGURE 3. CHART SHOWING PRODUCTION HOURS OF PRINTING, AND THE UNFILLED ORDERS OF THE UNITED STATES STEEL COMPANY

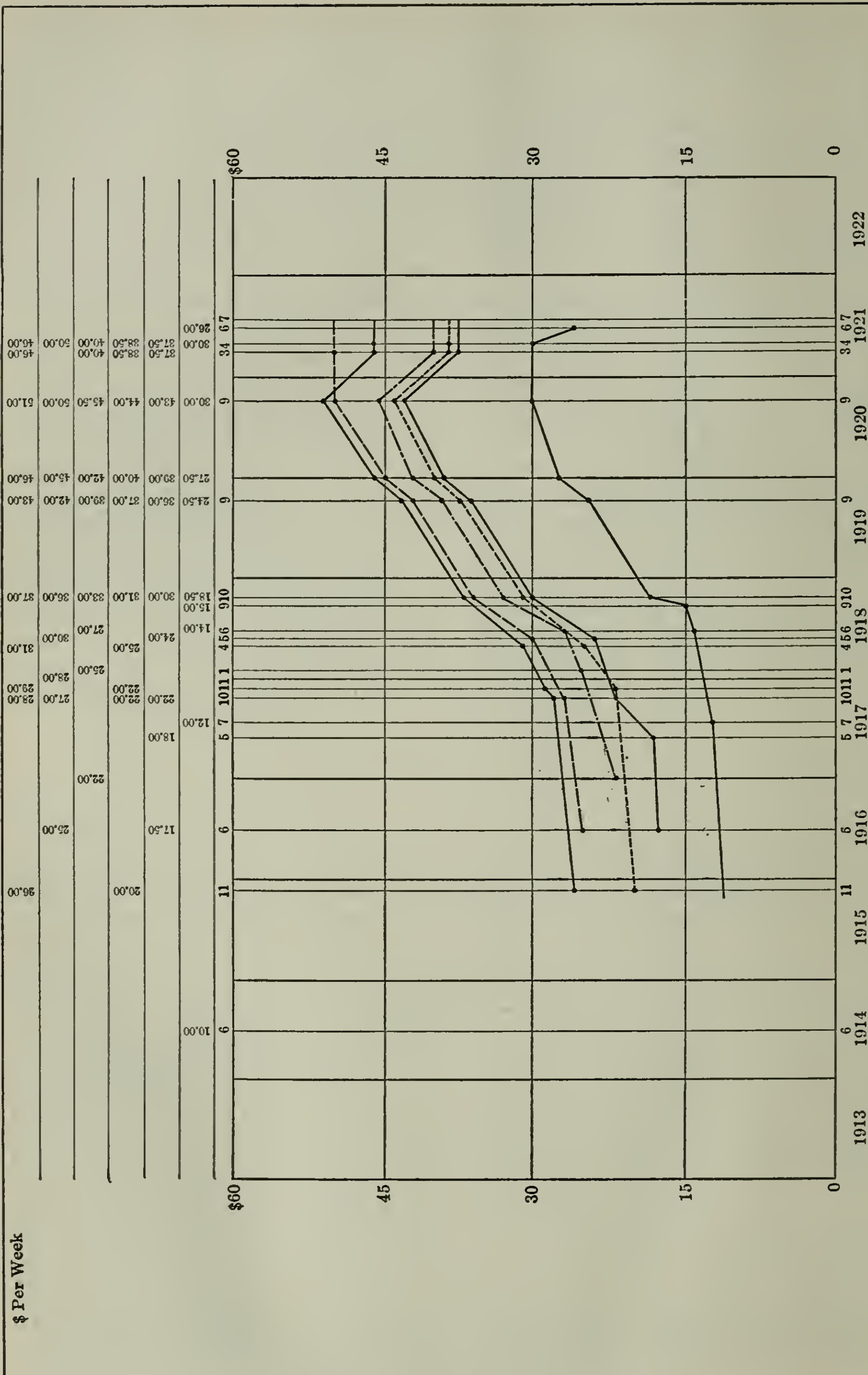

Figure 4. Chart Showing Alignment between Wages of Six Crafts in the Same Industry

tions rather than by the government direct! Governmental inquiries have disadvantages. Soon after the beginning of the war the American business man grew tired, if not annoyed, by the flood of questionnaires sent to him by government officials, often several agencies asking for the identical information, or just enough different to make laborious reclassification necessary. To most people the government seems abstract, cold, and remote. But on the other hand, a trade association composed of people in the same line of business, speaking the same language and sharing the same problems, awakes in us the feeling of friendliness and nearness that develops into effective cooperation. The members know the secretary, they have dealings with the headquarters staff, and they are more or less acquainted with each other. The data that are sent to the office of the association and assembled by it seem to have more immediate bearing on business affairs than that sent to Washington. What is submitted to the statistician of the association seems to bring quicker results.

This is not intended to imply that association secretaries do not experience difficulty in getting the members to fill out even simple blanks, and to send them in, but it is nevertheless true that the incentives for a wholehearted response to the association appeal are often stronger than any other. The consensus of opinion is that extracting information in the first instance is most difficult, but after the value of the composite information has once been proved the figures are thereafter forthcoming.

Another, and by no means minor reason why more business information should be gathered through trade associations rather than direct, is the resulting division of labor. Each association handling its own individual figures thereby divides the work among a great many hands. This saves time and money.

V

A chart taken directly from *The Survey* is seen in Figure 2. In the first regular number there were 17 such charts, covering as many different subjects. The one shown here is based on index numbers, and compares the unfilled orders of the United States Steel Corporation with steel ingot production. This example is chosen because steel is looked upon as a basic commodity, and a good index of general business conditions. In Figure 3 the unfilled orders curve has been replotted, using the base September 1920, so as to be directly comparable with the index curve representing productive or "sold" hours in the printing industry. This latter information is obtained from the United Typothetae of America, a printers' organization. It is noticed at once that the general trend of the productive hours conforms closely to the trend of the steel curve, although there are, of course, monthly fluctuations in the one that are not present in the other.

In these changing times trade associations and other bodies are often called upon to consider wage fluctuations due to the exceptional economic conditions of the past few years. Figure 4 is a study of the alignment between the wages of six crafts, all of which belong to the same industry. In reading this chart it should be remembered that the lines between the plotted points (indicated by the dots) do not represent real values. The lines merely help the eye to run from dot to dot. The dots themselves are placed on vertical rulings representing the months at which wage changes took place. The years are indicated at the bottom of the chart in large type while the small numbers

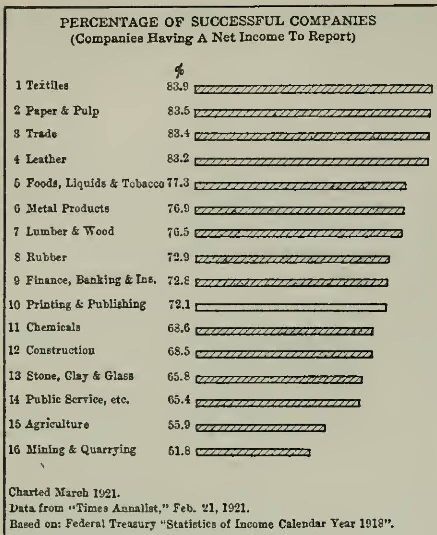

Figure 5. Measuring American Business by Yardstick of Tax Returns, 1918

represent months. Thus the six above 1919 stands for June. It is interesting to see how closely the crafts followed each other. The rise of wages during the war, and the decrease since then are clearly visible as well as the periods when the crafts were "out of line" or changed their positions.

A study of business at large if pushed far enough will show where a given industry or business enterprise stands in respect to other enterprises. Take for illustration the chart in Figure 5 which shows the percentage of successful companies in a list of 16 industries. The chart was originally drawn to make clear the position of printing and publishing, which is seen to occupy tenth place. That is, of all the printing and publishing concerns in the country making tax returns in 1919 only 72.1 per cent had a net income to report. This indicates that printing and publishing, while not one of the poorest, yet did not occupy as high a position as did some other industries.

A closer view of the same industry is given in Figure 6 which shows the distribution of gross income. It will be noticed that the net profit was only about 4 per cent, that miscellaneous expenses ran unusually high, and that the cost of goods sold was comparatively low. An investigation of these ratios to determine why they are so throws a great deal of light upon the particular industry with which we may be concerned. The Federal Treasury published tax returns for the year 1918 in a volume entitled, "Government Revenue and Corporation Income" that contains a wealth of first-hand data similar to that shown in the chart.

Another snapshot into general business conditions is seen in Figure 7. This represents the amount of liabilities involved in business failures during a single month. The chart was origi-

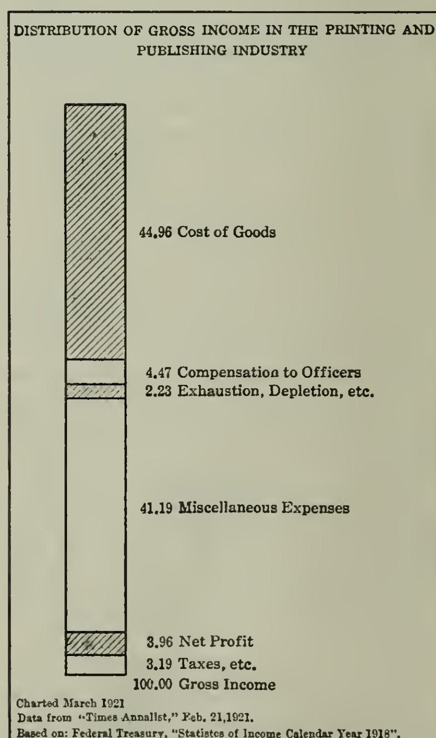

Figure 6. Measuring the Printing and Publishing Industry by Yardstick of Tax Returns

nally drawn as partial evidence of the economic situation into which the printing and publishing industry had fallen at a particular time. For other purposes it would have been better to have shown the same figures over a longer period, so as to include fluctuations month by month, and the accrued results at the end of a year. (Incidentally it might be mentioned that the bars representing printing and publishing in Figures 5 and 7 were drawn in outline in the original chart so that in the photostat copies they could be filled in with color and made to stand out vividly.)

Published indices of general business conditions such as those of Brookmire and the Harvard Committee will be found advantageous either as a means of inspiring confidence or of pronouncing caution.

VI

As was explained above, many industries are related on the basis of raw materials and finished products. Such a relationship exists, for example, between printing and paper making. The printer buys paper from the manufacturer, runs it through his presses, and then sells the material and the product of his labor to the ultimate consumer. It is of interest to the printer to watch paper production, and likewise the paper-maker keeps his eye on printers' sales and paper purchases. Figure 8 shows data from the Federal Trade Commission on the production and stock of book paper—the kind of paper used mostly by book and job printers. The chart tells a simple story. The stock increases at the end of the year while the production decreases, because manifestly shipments have decreased. This indicates a lessened demand for book paper, and indirectly was strong evidence that the volume of printing was also decreasing.

Figure 9 may be taken as a companion chart to Figure 8 since it is drawn

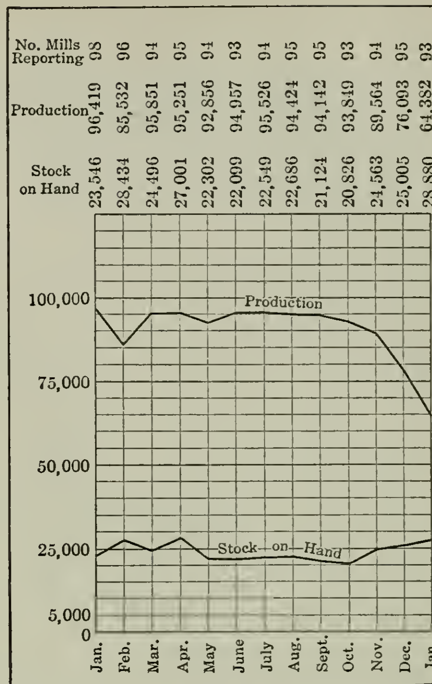

Figure 8. Tonnage Summary—Bookpaper Production and Stock on Hand at End of Month in Net Tons Since January 1920

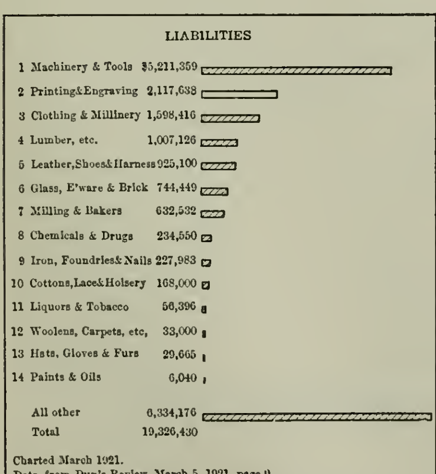

Figure 7. Failures by Branches of Business, February, 1921

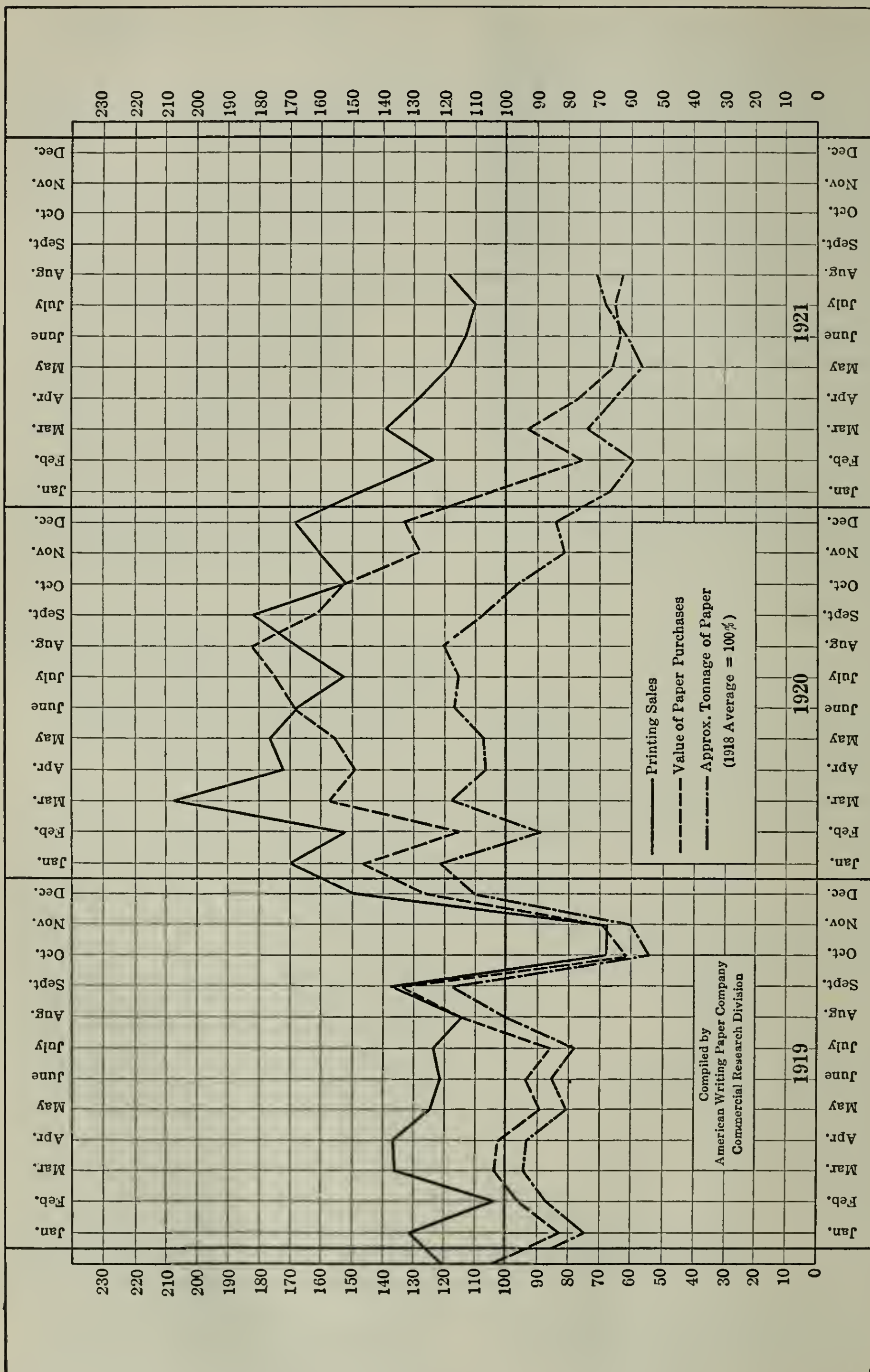

Figure 9. Data Compiled by American Writing Paper Company Showing Printer's Sales and Paper Purchases in New York City

from the paper-maker's point of view. It represents data compiled by the American Writing Paper Company showing printers' sales and paper purchases in New York City. Other statistics from related industries might be submitted to show the interdependence of rubber and automobiles, paper and advertising, etc. Sometimes there is a competitive element present as between cotton, wool, and silk.

VII

Summarized data for an entire industry or a large section of it are often available, and if so an exceedingly useful basis of comparison is provided. It is natural to turn first to the Census of Manufactures as a source of this kind of information. The volumes that are published every five years contain a wealth of material which it is impossible to describe in the limited space of this article. A sample is seen in Figure 10. It tells the story of 50 years of book and job printing in the United States. The thing to look for in the chart is not the height of the curves above the base, but the presence or absence of parallelism between the curves. With this in mind the reader will note that since 1899 wages have increased at a faster rate than have the number of wage-earners, indicating that the employees of printing plants have received more money per capita during recent years than formerly. The value of products has increased at a faster rate than any of the other curves proving the value of products per employee or per dollar of wages has substantially increased. The drop during the 10-year period from 1879 to 1899 in every element except value of products was probably due to the introduction of new inventions resulting in the saving of labor. In order to provide a basic comparison between the increase of this industry and that of the population of the United States a line representing the increase of the population has been added to this chart. The slope of the line is correct but it has been moved out of its proper relation to the scale figures at the side of the chart so as to avoid confusion with the other curves. If the records were available it would be instructive to plot on this or a similar chart the book and job figures of a local printers' association or the results of an individual printing plant. We could then see how well the smaller units kept pace with the total.

Another very good yardstick with which to measure an entire industry is illustrated in Figure 11. Here we see the total productive or "sold" hours reported by representative printing plants throughout the country. The data are compiled and published monthly by the United Typothetae of America. The base of the index numbers is September 1920. The chart shows totals only, but the figures are available for 10 departments common to large printing plants, such as hand composition, machine composition, cylinder press, etc. The solid line in the chart represents the weighted total of all departments, whereas the broken line gives the same information for a single large printing establishment in New York City. The close comparison of the plant with the total is quite remarkable, and illustrates very well the use to which such a total chart can be put.

Just as individual competitors watch each other, so it is the business of the local association to watch the collective competitors of the association as a whole. For example, the business normally belonging to one city or one locality may be attracted to outside territory through price inducements or other results of competitive conditions. Figure 12 shows an array of wage scales

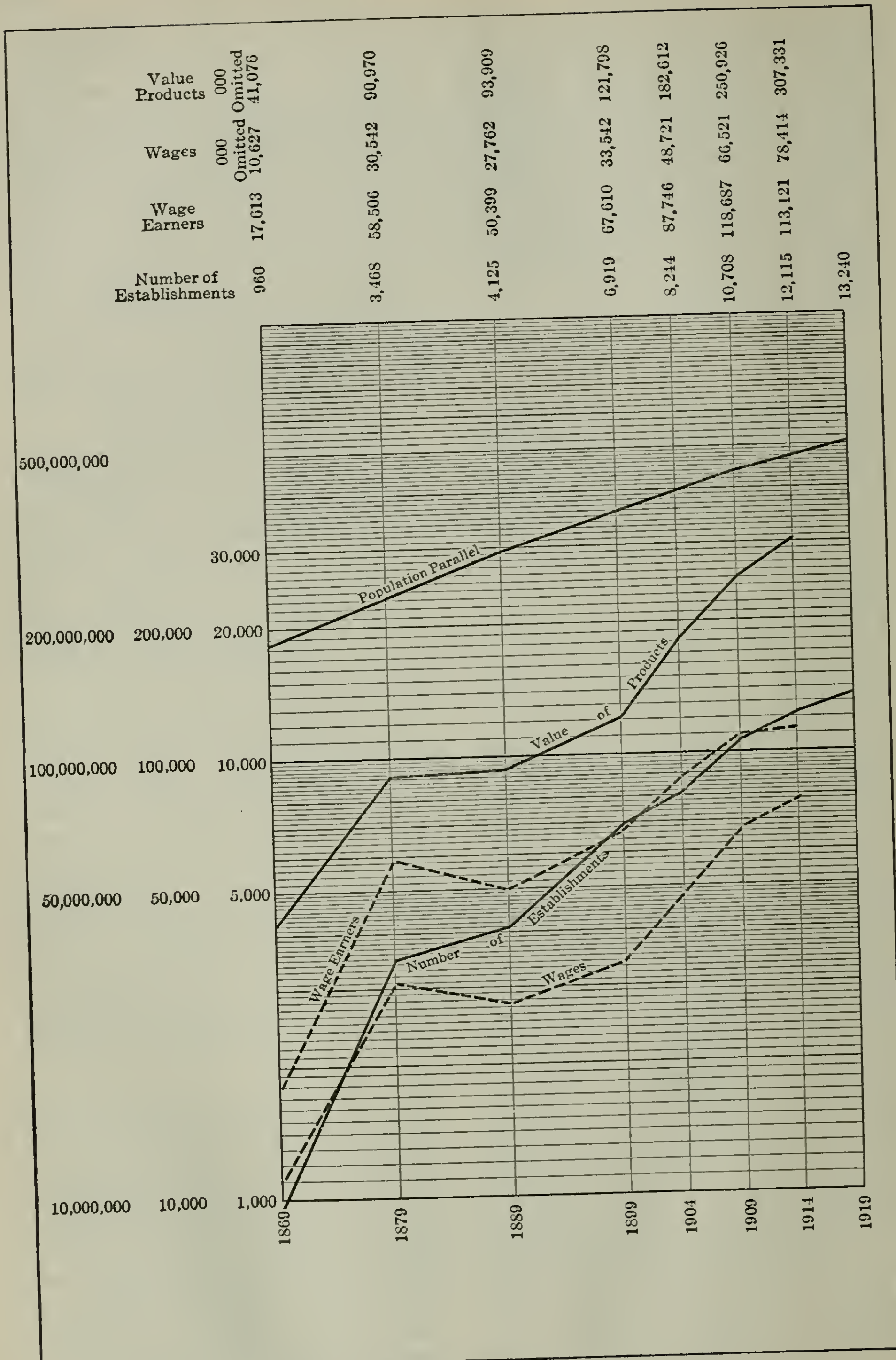

Figure 10. Chart Showing Fifty Years of Book and Job Printing

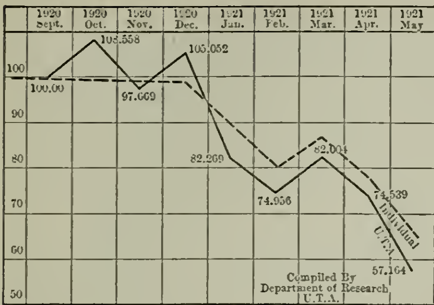

FIGURE 11. INCREASE AND DECREASE IN PRINTING PRODUCTION AS SHOWN BY PRODUCTION HOURS; SEPTEMBER, 1920, TO MAY, 1921, INCLUSIVE

for a certain craft for 34 competitive cities. The average not including New York, and the scale in New York is shown at the bottom of the chart. New York is not only above the average, but is also above every other city. The chart in Figure 13 was also drawn to show competitive conditions between New York and outside cities. It is constructed on very much the same principle as the preceding chart, but it shows hour costs for a single department. This is a sample of about a dozen other charts drawn to show the comparative costs in the same number of departments and cities. A well-informed trade association will have such information always available, and preferably in chart form.

A knowledge of

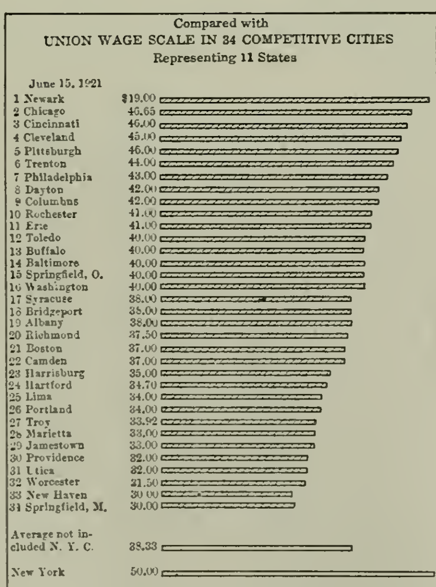

FIGURE 12. SCALE OF NEW YORK——— ——— UNION NO.—COMPARED WITH UNION WAGE SCALES IN 34 COMPETITIVE CITIES, REPRESENTING 34 STATES

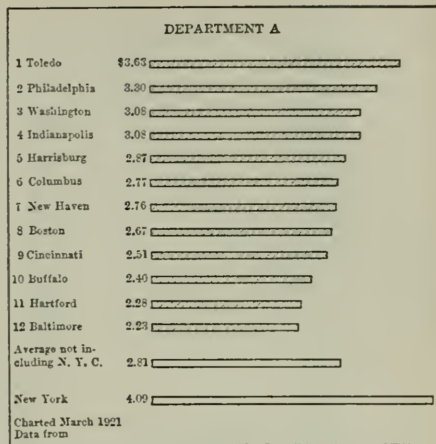

FIGURE 13. DEPARTMENTAL TOTAL HOUR COST, 1921

general business conditions, or the factors of related industries, or a picture of the general industry to which a given industry belongs are important and useful, but they cannot compare in importance and usefulness with the statistics of the group of concerns that comprise the local association, or make up a particular group or section of a national trade organization. The most frequent practice is the compilation of production, shipments, orders, stock, sales, costs, and similar figures. Usually blank forms are distributed at stated intervals which are filled out by the members and returned. In some cases the

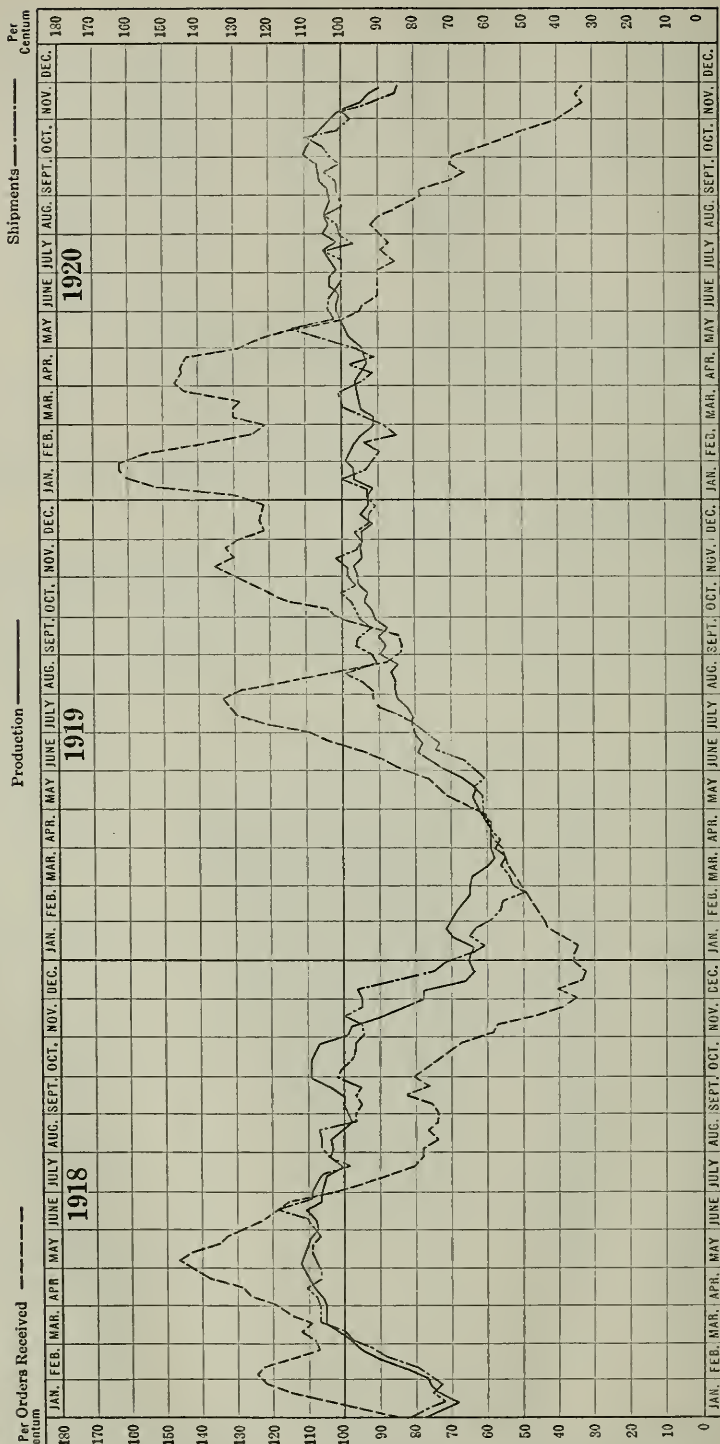

Figure 14. Trend Chart of Orders Received, Production and Shipments, Used by ——— Association

blanks bear a key number so that the name of the concern reporting can be known only to the one holding the key.

In beginning the work of gathering statistical reports from members an association would do well to heed the experience of other associations. A number of secretaries, with whom the writer has been in conference recently, emphasize the necessity of making all questionnaires simple and brief. The common danger is to ask for too much at any one time. Another caution is not to delay beginning the compilation until every concern has agreed to send in the necessary information. The proof of the pudding is, after all, the eating. One association testifies that it began making composite reports from the replies of only seven members, and that just as soon as the others saw the value of the compilation they came in, so that today the reports are authoritative for the entire industry.

Figure 14 is a typical example of a chart showing orders, production, and shipments. Charts similar to this one are in use by many associations. They furnish an accurate picture of the business. The accidental variations and other irregularities in the business of any one member are covered up and counteracted in the total thus making the results entirely trustworthy. The individual member sees only his own business, and his opinions are likely to be prejudiced. The chart shown in the figure is constructed so as to represent percentages above or below a 100 per cent normal line. Frequently the combined figures are set forth in concrete dollars or pounds or other units of measure. It is then possible for the member to tell not only whether he is keeping pace with the total, but what proportion of the business he handles.

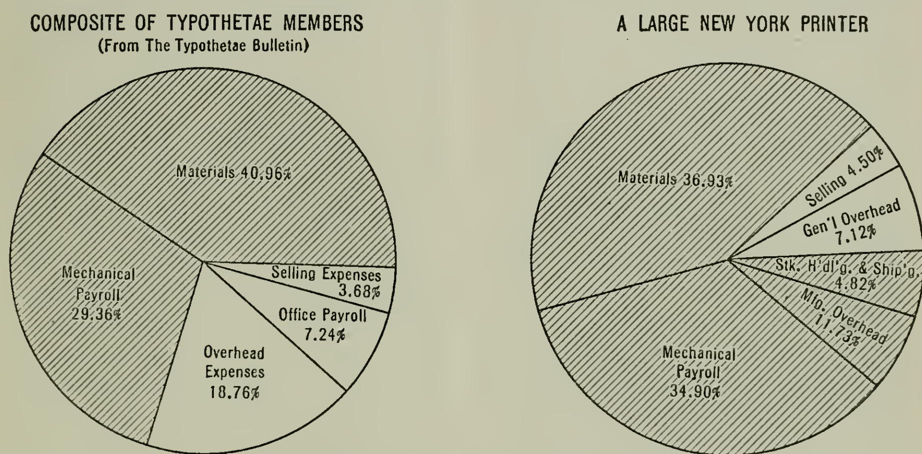

FIGURE 15. CHARTS SHOWING THE ANALYSES OF THE TOTAL COST OF A PRINTED PRODUCT EXPRESSED IN UNITS OF $100

One set represents figures taken from a composite of Annual 9-H Sheets of a number of members of the United Typothetae of America for the Year 1919 and Involving a Cost of Product Totaling nearly $40,000,000. The other set represents figures of a single plant from published sources.

Such charts as these are a great deal more than pretty pictures to be hung on the wall or to be put under the glass tops of desks. They furnish the basis for judgment and sound interpretation of business conditions. In the larger numbers of the total the irregularities of the individual are covered up, and for that reason they are a safer guide than the opinions of any one person.

This reminds one of the old adage: "There is safety in numbers." A composite chart often gives assurance where it is vitally needed. Suppose your business is falling off in spite of your every effort to prevent it. You imagine that the fault is yours, and you are tempted to cut prices radically or to take some other drastic action. Then you look at the composite chart, and to your surprise you discover that the total business of your group or of the entire association is not only falling off as your own business is falling off, but it is falling off at a faster rate than your own. The blame for the slump is not yours—it is beyond your control. You resolve that if the others can meet the conditions you can, and what might have been blind competition has now become enlightened competition, or as it might better be described, friendly co-operation.

Likewise, if an examination of the facts shows the individual business man that his particular business is falling off more rapidly than the total, he is awakened from a false security by the wholesome incentive to keep up with the crowd. In this way trade consciousness and industrial solidarity are promoted. The fact that the summarized information is available for all, without individual figures being divulged, produces a feeling of co-operation and friendliness. There are also very practical results. A number of associations that compile figures showing stocks on hand by classes of products have been able to bring about material reductions in inventory, thus releasing money for other purposes. Other associations use the composite figures to set up standards of performance by which the efficiency of a plant can be gauged. A striking example is seen in the percentage relation between chargeable, nonchargeable, and idle time in the printing industry. One hundred per cent represents the total hours that the plants can be operated. Of this total a certain percentage represents the amount of time charged to the jobs passing through the plants, another percentage represents time distributed as an overhead charge, and the remainder is idle time. The fixing of such ratios for a composite of a large number of plants sets up a standard against which any one plant can be measured. Several associations have recently begun to give considerable attention to standardized methods of cost finding. One important association of wholesalers is conducting an investigation to determine the possible relation between profit and stock turnover. Examples of vivid charts that have been used to set up standards and make comparisons therewith are seen in Figure 15.

The gathering, compiling, and distributing of data is not the whole statistical duty of trade associations. Statistics are of little value unless studied and applied. The individual member of an association is always glad to receive interesting figures and attractive charts, but he may not see how they concern his own business. A few large concerns have statistical and research departments or staff assistants trained in the interpretation and use of statistics. The others ought not to be forgotten or overlooked by their associations. Carefully written letters of explanation, and wisely conducted conventions and meetings will help much, but the private conference, if possible in the member's office, is most efficacious. Associations might even appoint one of their staff to be an economic adviser to members who need to know more about the place of statistics in business. Some associations not requiring the full-time services of a statistician are receiving part-time assistance of such an expert whose counsel is shared by several associations.

ORGANIZATION AND PROCEDURE FOR BUDGETARY CONTROL

BY JAMES O. McKINSEY *

IN preceding articles the preparation and use of the departmental budgets have been discussed. This discussion has emphasized the interrelation of the activities of the functional departments and the need of a correlation of these activities. Since it is the purpose of budgetary control to effect this correlation, the budgetary program is as broad and comprehensive as the business itself. Since the budgetary program involves the activities of all the departments, it is not expedient to delegate its execution to any one department. Rather, it is necessary to set up an organization which, although it must include the executives of all departments, has a central head which is independent and superior to the departmental executives.

In harmony with this conclusion, it is desirable that the president or chief executive of the business should have direct control of all matters pertaining to the budgetary program. He must of necessity delegate most of the duties imposed on him by this program to subordinate officers, but these officers should act as his agents and be directly responsible to him for the proper performance of the duties delegated to them. In case of disagreement between departments with reference to the co-ordination of estimates, the decision of the president must be final.

The importance of having the chief executive in direct and immediate control of the budgetary program cannot be overemphasized, otherwise two undesirable situations may develop:

1. The departmental executives and their subordinates will fail to realize the importance of the budgetary work and will not give it the time and attention which are necessary to make it worth while. If they are required to submit estimates and to report with reference to their execution to some subordinate official, or even to the head of some other functional department, such as the general auditor's, they are apt to resent what they will regard as an undue interference with their activities by one who is not directly concerned with them.

2. Disagreements will arise with reference to the co-ordination of departmental programs. For instance, the sales department may desire to sell more than the production department thinks it can produce profitably, or the production department may desire to produce articles which the sales department does not think it can sell, and both the sales and production departments may desire to increase their activities beyond what the financial department thinks can be financed. Obviously the only party who can decide these questions is the chief executive who is superior to all the executives interested in the controversy. These departmental executives will not accept as final the decision of an officer of equal or lower rank to themselves. Furthermore, if the executives in charge of the preliminary work on the budget are the direct representatives of the chief executive, they are apt to be given more consideration than if they are members of a subordinate department.

In the preparation of governmental budgets it has usually been assumed that final control and responsibility is vested in the chief executive. Consequently he is usually required to submit to the legislative body the proposed budget with his personal approval, and he is held directly accountable for its

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contents. In the enactment of the recent legislation creating budgetary control for the United States Government there was much discussion with reference to the relation of the President to the budgetary organization. The Senate desired to place the Budget Bureau in the Treasury Department while the House desired to make it independent of any department and answerable directly to the President. *The New York Evening Post* discussing the proposed law, very ably sets forth the arguments for placing the President in direct control of the Budget Bureau in the following editorial, entitled "The Right Kind of Budget:"

Passage by the Senate of the McCormick budget bill is gratifying as a forecast of the early establishment of a budget system at Washington. But it is highly desirable that we get the right kind of budget system. Otherwise the work will have to be done over.

One of the prime essentials of a proper budget is that it be placed directly under the President. The McCormick bill places the system in the Treasury Department. On the other hand, the Good bill, which has been introduced in the House, places the Budget Bureau directly under the President. This is undoubtedly the course that should be followed. The McCormick arrangement, if not fatal to the right function of a budget system, would greatly hamper it. The reasons lie on the surface. One of the most important duties of the chief budget officer will be to cut the estimates submitted to him by Cabinet officers. It takes no great stretch of the imagination to see the situation that will be created if an official connected with a particular department cuts the estimates that come from other departments. Think of a budget official passing upon the estimates of his chief. Inevitably there will be a feeling that the department to which the budget system is attached is being favored. In order that the system may have a fair chance, it must be in exactly the some relation to all the departments. With respect to it, just as with respect to the President and Congress, the departments must be on the same plane. A budget officer representing the President will be in a very different position from a budget officer representing the Treasury.

The argument is no less strong with reference to the relation between the budget and the President. No matter where the budget system is placed, the President will be the final arbiter in important differences between the budget officer and department heads. It will be much easier for him to settle these differences if the budget is part of his office than if it is connected with one of the departments. In the latter case appeal would first be taken from the budget officer to the head of the department and then to the President. This would put the President in the delicate position of having to decide between two of his Cabinet officers. With the budget officer a part of the President's Staff, the final conference would consist of the President, the budget officer, the department head and perhaps the head of the bureau affected—a much more promising assemblage for an objective consideration of the case.

The budget officer will not be a mere reducer of figures. To be of the greatest usefulness, he will make it his business to keep the President informed of the activities of the various departments. He will follow up his work on the estimates each year by observing the way in which the appropriations are spent, continually reporting to the President. This valuable service, it is obvious, can be rendered much better by an officer attached to the President's Staff, than by one attached to a department. Under the latter arrangement, indeed, it would be rendered at a maximum of difficulty.

As is well known, the Senate and the House compromised their differences by placing the Budget Bureau nominally in the Treasury Department, but with the Director of the Bureau reporting directly to the President. Since the appointment of the present Director, the President has taken care to emphasize to the departmental heads that the Director is the representative

of the President and that the request of the former should be treated as the request of the latter.

II

The arguments set forth in the foregoing quotation apply with slight modification to the organization for budgetary control of the private enterprise. The chief executive must be both the nominal and active head of the budgetary organization.

In all businesses, when a functional organization exists, the budgetary program will usually be expedited and benefited by the establishment of a budget committee. This committee will consist of the principal functional executives with the president as chairman. In a manufacturing business it will be satisfactory usually to have it composed of the president, the sales manager, production manager, treasurer and comptroller or general auditor. In a mercantile business, the president, merchandise manager, treasurer and comptroller may be sufficient.

Under the authority and direction of the president, the budget committee considers all departmental estimates and makes such changes and revisions as it may think desirable. No estimate is to be effective until it has received the approval of the budget committee. In case the budget committee cannot agree with reference to any estimate, the question in dispute is left to the president and his decision is final. In case the judgment of the president does not agree with that of the majority of the committee, he has the privilege of overruling them since he is the head of the budgetary organization. A wise executive would take such a step, however, only in extreme cases, for the success of the budgetary program depends to a considerable degree upon the co-operation of the executives.

In the consideration of the departmental estimates the budget committee may call on departmental heads to explain reasons for the variations in their estimates from the estimates for past periods or why changes cannot be made which the committee thinks desirable. By this means the committee obtains full information on the subject before making its decisions. When the committee and the president have approved the departmental estimates, they then become the working budgets for the departments. Of course they may have to be submitted to the board of directors for approval before becoming effective.

At the end of stated periods of time, preferably monthly, the committee will receive reports showing a comparison of the performance for the period with the estimated performance. For instance it will receive a comparison of the sales for the month with the estimated sales for the month; of the actual production with the estimated production; and of the actual expenses of each department with the estimated expenses. On the basis of these reports, it may make revisions in the budgets for the remainder of the budget period if it deems such revisions necessary. The receiving of such reports and the making of such revisions are a very important part of the committee's duties. It is of little value to make budgets unless a check is maintained on those who are responsible for their execution. Unless such a check is maintained, proper attention will not be given to the preparation or the execution of the budgets. Furthermore, budgets deal with future operations and are therefore apt to be inaccurate. It is necessary that these inaccuracies be discovered and corrected as quickly as possible. It is exceedingly unwise to make plans covering any considerable period of time and to follow these plans

blindly without taking into consideration the changing conditions which could not be foreseen when the plans were made.

If the departmental estimates and the periodic reports are to reach the budget committee at the proper time for their consideration, there must be established a definite procedure for their preparation and submission. After this procedure is established, there must be an executive responsible for its execution. Since the president is the executive head of the budgetary organization, it is desirable that the executive to whom is delegated the supervision of the budgetary procedure be a member of his staff. This executive may be given a distinctive title, or he may merely be termed "Staff Assistant to the President."

Under the authority and direction of the president, the staff assistant to the president has general control and supervision over the preparation and execution of the budgetary program. His general duties are indicated by the following summarized outline:

1. To receive from the departmental heads the periodic estimates which have been discussed in preceding articles.
2. To transmit these estimates to the budget committee with such recommendations as he may think necessary.
3. To supply the budget committee with all information available which will assist it in the consideration of the estimates.
4. To receive from the budget committee the estimates as approved and transmit these to the departmental heads.
5. To receive periodic reports prepared by the operating departments or the accounting department showing the departmental performance for the period.
6. To transmit periodic reports to the budget committee showing a comparison between the estimated performance and the actual performance for the period for each department and to make any recommendations with reference to revisions which he thinks necessary.
7. To transmit to the departmental heads any revisions in the original estimates which have been made by the budget committee.
8. To recommend to the president and to the budget committee any changes in the budgetary procedure which he may think necessary.

He usually acts as secretary to the budget committee and in this capacity is constantly available for consultation with the members of the committee. He has the implied authority to do all things which are necessary to the proper performance of those which are expressly stipulated.

III

It is important that the staff assistant in charge of the budgetary program should not be regarded as doing work of a clerical nature. His function is something more than the supervision of the budgetary routine. In the operation of the budgetary program many questions of policy will arise. The departmental executives will often differ with reference to these questions. It is the duty of the staff assistant to study these and be able to offer to the budget committee and the president the matured judgment of an impartial observer. His work brings him in touch with all the departments of the business and should enable him to have a more comprehensive view of it than is usually possessed by the line executives. As a result, he should be able to make recommendations and suggestions with reference to new methods and policies which will be beneficial to the business. He should also be collecting data which will serve as a basis of more accurate estimates. By these means he can become one of the most important executives in the organization.

The executive heads of the functional

departments are responsible for the preparation of the estimates of their departments at the time and in the manner prescribed by the adopted procedure. They are also responsible in some cases for the periodic reports showing the performance for the period. Some of the periodic reports are obtained from the accounting department, while some are obtained from the operating departments. Usually the operating departments will submit reports more quickly than the accounting department, and promptness is necessary in order to use the reports effectively. Any recommendations which a departmental executive desires to make with reference to changes in budgetary procedure will be transmitted in writing to the staff assistant to the president. The latter will transmit it to the budget committee for consideration.

There is a difference of opinion among executives with reference to the extent to which the departmental head should delegate the duty of preparing the estimates of his department. Although an arbitrary answer to this question cannot be given, it is the opinion of the author that in so far as possible the preparation of the original estimate should be delegated to the one who will be responsible for the carrying out of the estimate after it has been adopted. For instance, if a business distributes its product by means of branches, each branch manager should make an estimate of the sales of his branch since he will be responsible for the enforcement of the estimate which is finally adopted. The branch manager may in turn consult his salesmen with reference to their opinion, especially if the branch is selling at wholesale and has traveling salesmen who are in more intimate touch with the trade than the manager. Of course all estimates made by subordinates, such as salesmen, must be revised by their superiors, and the latter should collect data which will enable them to make such revisions properly. In the same manner, the head of each operating department should prepare an estimate of the cost of his department. For instance, the head of the personnel department, traffic department, office manager's department, etc., should prepare such an estimate for his respective department. It is true the general auditor might prepare from his records an estimate for some departments, but it is preferable to require the estimate from the department. If the department is divided into sections, the head should require an estimate from the head of each bureau.

This procedure has the following desirable results:

1. It requires the subordinate to study what he expects to do and to make plans with reference to the future. For instance if the salesman knows that he must submit an estimate of his sales for the next year, he will study his territory to see what the possible sales are. If he makes an erroneous estimate, it gives his superiors a good opportunity to point out his errors to him. For instance, the sales manager may point out to him possible sales which he has not considered at all.

2. If the subordinate makes the estimate himself, he will feel a greater responsibility for its execution than if it is made by some one else and handed to him. In the latter case he has an alibi because he may contend that the estimate was an impossible one.

In many businesses the budgetary program after it has been formulated and approved is submitted to the board of directors. In case the program involves a radical change in policy or the acquirement of a large amount of capital, they may deem it necessary to modify it. The staff assistant to the president should have available

data which will serve to show the modifications which are possible and their effect. If radical modifications are necessary, the board of directors may instruct the chief executive to prepare a budget giving effect to the changes which they desire. In this case all the departments may be required to submit new estimates or the changes may be such that they can be made by the budget committee. In any case the changes as made must be transmitted to the departmental heads by the staff assistant to the president.

Although it is well to have the budget submitted to the board of directors for consideration, it should be transmitted to them only after it has been put into completed form. It is obvious that the directors are not interested in the details of preparation.

If the budgets are to be prepared promptly and efficiently, it is necessary that a very definite procedure for their preparation be established. This necessitates that the time of the preparation of each estimate be fixed, and the period of time granted to each party for its consideration be established. To establish such a procedure, it is desirable to prepare a Manual on Budgetary Procedure which will set forth the duties of each unit of the budgetary organization with reference to the budgetary program and the stipulated time for the performance of these duties. The staff assistant to the president should be responsible for the enforcement of this procedure.

THE ART OF INVESTMENT

BY MORRELL W. GAINES*

PART II—BUSINESS BAROMETERS

IT is essential that the investor be forewarned of the greater changes. Safety depends upon what is chosen as barometer, and how it is used. The greatest and perhaps most common mistake is to be unduly influenced by what has already happened, especially in the securities markets, and to assume that it is an index of what will happen next.

The prepared statistical barometers are somewhat useful in the sense of placing before the reader a convenient summary of recent financial and industrial facts. But they are too narrow, and the conclusions drawn by the compilers are weakening, sapping the power of independent judgment. The investor must needs look forward and not back, and through his own glasses.

Original sources of information are preferable. These are the bank statements, the daily quotations of prices of securities and commodities, the rates of interest and exchange, financial news of daily and weekly journals, the annual reports of corporations and the statistics of the investment manuals. As secondary sources there may be added the monthly Bulletin of the Federal Reserve Bank of New York, remarkable for the clarity and scope of its figures and analyses, the Federal Reserve Bulletins issued from Washington, the monthly reviews of member banks, the reports of the Secretary of the Treasury and Comptroller of the Currency, and the summaries of foreign financial news given in such periodicals as *The Statist and Economist.*

It is better, always, to know what are the few salient and important facts, to learn those facts, and to reason correctly therefrom, than to weigh down the mind with a mass of unilluminating statistics; especially the dead statistics of events already past. Detail, and sharp outlines, are necessary with the vital facts. The rest should be background, where details are not only useless but destructive of perspective. The mental processes should be selective and logical rather than those of prodigious memory and scant reflection.

There is a great volume of statistics commonly classed as barometric among which may be mentioned the loans, deposits, note issues, and reserve ratios of banks, bank clearings, railroad earnings, building permits, steel tonnage, crop reports, imports and exports, price indices, and figures of immigration. With these statistics there should be sufficient familiarity to permit of comparison and reference; sufficient knowledge so that the meaning of changes is understood. They, with other similar broad expositions of general conditions, are the background from which must stand out, at any moment, the critical decisive factors in the current financial position of the country, and of the world.

Living in the familiar atmosphere of the main and significant facts brings about an automatic process of selection. Any marked change, distorted relationship, or news out of the or-

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dinary course, arrests the attention. The mind concentrates upon the change as a center of movement. The why and wherefore are reasoned out, the effect estimated, and the secondary circle of consequences guessed at. As events unfold they are compared almost without conscious effort with those considered logical when the cause was first discerned. The investor finds himself, quite naturally, in the position of watching the unrolling of the scroll of financial history. He can discover no better arena to "seek the reason of things"; no wider opportunity to "reach the field with a trained power of judgment."

Much also may be learned by systematic inquiry. The credit departments and executives of banks organize methods of keeping themselves informed. The heads of all large businesses use such facilities as they may dispose of for keeping in touch with developments affecting their trade. In every direction there are men with special knowledge of their own business, of experienced judgment on matters within their own observation. Personal contact can be established through reliable channels with the progress of doubtful situations. Trade conditions, crops, the political outlook, the prospects for tariff and tax legislation, the trend of affairs in foreign countries, the drift of sentiment toward caution or optimism, the special local situations, in fact most of the undercurrents, can be learned by word of mouth. The investor, if he is discriminating, may supplement what he reads, and thinks, with what he hears, until the habit is formed of keeping *en rapport* with what is going on.

An avenue of inquiry, once entered on, may be followed to an investment conclusion. Take, for example, the present moment, when the commodity situation is perhaps the weightiest of the current financial problems. Information as to the prices, movement, and stocks on hand of staples may be had from those in the trade, and followed up through the statistics published in trade and commercial journals. The problem confronting an industry may be ascertained. It remains to pass judgment upon the solution, and to consider whether or not the securities of that industry offer, at the price, a safe and attractive investment.

II

Some have a natural gift of turning information into action. Others must acquire it. To the selective mind all information that comes in is barometric, leading to decisions taken with regard to investments. It is possible to learn when it is safe to invest and when securities should be turned into cash; the type of security, short-term notes, long bonds or stock, to be favored under the existing circumstances; and finally, at the end of the trail of information, the actual security to be invested in.

Following the financial news brings about the creation, in the mind, of a composite barometer of the condition and prospects of the great divisions of enterprise. Railroads, public utilities, steels, coppers, textiles, the oil, automobile, coal, and other industries, are each envisioned in their existing environment, facing their separate problems. According to the state of business the investor will think well of one group, but poorly of another. His barometer indicates where improvement is to be expected, and where retrogression.

Crops, for example, may augur well for the northwestern and central western railroads. Wage decisions may affect the prospects of all railroads, but

especially the trunk lines. Heavy stocks of refined copper, with slack consumption, may depress the issues of the companies producing and refining copper. A period of extravagant spending may bring lavish wealth to automobile and textile companies, and a period of curtailment, at declining prices, fall most sharply on the same companies, which stand to lose both on their business and on their inventories. The collapse of a boom in Japan may affect silk companies, and a similar speculative collapse in Cuba may leave sugar growing companies facing an unsold crop, high costs, and low prices. The important developments are in the news, in time to be used if correct deductions are drawn.

Especially in time of depression it is useful to be able to judge which group of industries will be quickest and surest to revive. It is true, in a broad sense, that all industries come up together in the ultimate general revival of activity. Nevertheless there is precedence, and much is to be gained by avoiding industries which have come into a bad and unsound position and choosing the securities of those which are sound at bottom, but slowed down.

In the present crisis, due to a pause of consumption, action may well be predicated upon the fact that the normal, non-luxury consumption will be restored sooner than the intermittent expansion, or construction, consumption. Where the price decline took place early, as with silks and wools, the recovery is already in evidence. Other finished goods may be expected to follow as existing stocks on the shelves are worked off. This is already beginning to be apparent with boots and shoes and cotton manufactures.

But the heavy industries, such as steel, copper, soft coal and iron ore, are still either enmeshed in the gradual process of price reduction or are struggling with an accumulated oversupply. These industries are partly dependent upon railroad and utility construction for their demand, and the large buying will not begin until this class of companies is again able to do financing, and until prices have reached bottom figures. In general also the stock on hand of raw materials, copper, hides, rubber, cotton, low and medium grade wool, and sugar among other commodities, is excessive, and this has its bearing on securities.

III

Having foreseen the approach of betterment in one or more of the major groups of industry it is not difficult for the investor to select from that group the security adapted to his requirements. The large companies publish full annual reports. The prominent bonds and stocks are well known. The active investor is posted on the principal issues, able to compare one with another as to risk and possibilities of profit. In accordance with his analysis of the business situation he may then choose suitable stocks or bonds. Quite as important, his running barometer should guide him in the relinquishing of securities, from time to time, according as retrogression may appear.

When following the progress of groups or types of business the investor should first make sure that the company itself, into which he puts his funds, is solvent and safe. The standard companies, known to follow careful financial policies, afford sufficient choice to permit decisions and action. Questions of solvency, or dividends, are wont to become suddenly imminent upon change in conditions, especially at the end of a period of prosperity, and it is a safe rule to avoid them from far off. If less known companies are

to be availed of, it should be only after special study and examination of a very recent balance sheet. The lesser companies, having small means of tiding themselves over difficulties either by bank borrowing or issue of securities, are much more apt to develop individual weaknesses, and when they do holdings of their securities are unmarketable except at great sacrifice.

The type of securities to be invested in depends in part upon the barometric indications. It is always true that risks should be insured against by dissemination, not too much being committed to any one hypothesis of the probable course of business. It is also true that a solid substratum of bonds, or other prime securities, should be held as protection. But these limiting factors do not annul freedom of action in accordance with the outlook. There are times of expansion when stocks will go up, times of high money when bonds will go down, times of liquidation when the soundest of short-term maturities are needed, and times of depression when one must pick and choose among stocks and long bonds may be depended on to rise. Of these occasions, and their advantages, the investor must be aware.

Of the statistics of trade and industry commonly described as barometric there are few which do not refer to what is already past instead of to the future. Steel orders, for example, are a result and not a cause of financial conditions. The Pittsburgh district is notoriously wrong in its estimate of the business outlook and the course of the securities markets. Carnegie made most of his millions by going counter to the view of those who dwelt too close to the blast furnaces, by buying properties cheap when the fires were dead, and finally selling out when all of the stacks were in full blast. It is true that at one point in the cycle of business, the first revival after depression, the incoming of orders for steel may be barometric, indicative of a widening circle of activities until the steel is made, fabricated, and erected in new construction. This information, however, rarely antedates the stock market, or the bank figures. It is not anticipatory but confirming. In a similar manner the crop reports are a useful barometer in their proper use. Good harvests have a sustaining influence on business through the next six months and have been known, when conditions were suitable, to turn the tide from depression to activity. From midsummer on the crops have an influence both on sentiment and on prices. But in general the so-called barometric figures summarize what has happened, with little light upon what is about to happen.

IV

The war, with the accompanying phenomena, has left us a legacy of figures that are barometric in the deepest and widest sense. From time to time, in years to come, they will result in great changes in values, both those of slow evolution and those of sudden disturbance. They constitute fundamentals of the post-war era, facts permanent and overshadowing, to which the barometers of minor change must be adjusted with due sense of proportion. It is an era demanding great alertness, much courage and the soundest conservatism; a treacherous period replete with unusual opportunities.

The bank statements, the best single barometer of general conditions, have undergone complete alteration since 1913. The resources of the banks of the United States have doubled, being now over fifty billion dollars. Toward the end of the last

century, in 1895, the national and state banks had only $6,703,544,084 of resources. While there are certain duplications in the present figures, the rediscounts, reserve deposits, and subscriptions to capital stock in the reserve banks being resources also of the member banks, nevertheless it is evident that there has been a great increase of banking power. Although the country is experiencing a deflation of credit, ensuing upon an overinflation induced by short-sighted Treasury policies in financing the war, the fact that bank credit may be given in much larger volume than formerly, and under new conditions, may still be considered as stimulating and enlarging, over a series of years. Whatever the temporary ups and downs, the power to conduct commerce and to do financing has been vastly increased.

Among foreign countries, with the possible exception of England, the post-war picture is not favorable. In 1919 paper currencies had been inflated among the nations at war at least sixfold, excluding Russia. The metallic base had fallen, until almost all are practically upon a paper basis. Over two hundred and fifty billion dollars of government loans had been issued. Paper and debt are still rapidly increasing. There are continued extravagance of governmental expenditure, an impoverishing burden of taxation, and actual or impending insolvencies of entire countries. Through international trade, and finance, the United States is not unscathed by the course of business abroad. Next to the bank statements, which summarize domestic conditions, the rates of exchange, which reflect banking and commercial conditions overseas, are therefore, the most important barometric figures. No significant fall or rise in exchange is without effect on securities; and such greater changes as may occur carry with them a tremendous and forceful impact.

The United States has two and one-half billion dollars of federal reserve notes outstanding, and approximately twenty-four billion dollars of debt. The federal expenditures for 1921 are at the rate of five billions of dollars. The taxation of productive capital has been heavy to the point of consuming vitality. Yet the population and the productive power are intact. The country has escaped the utter exhaustion of the war. Emerging slowly and with difficulty from the war-sequel of loss and stagnation, its internal recuperative power may be relied on to restore its vigor. At the same time it must be frankly confessed that externally, in foreign trade, financing, and even in immigration, difficulties and disillusionments are to be faced. The recovery will not be easy, or unscarred.

The great figures of debt, taxation, expansion of banking power, and inflation of currency, evidence the most noteworthy financial upheaval of history. The human basis, upon which this changed superstructure rests, is also changed. There is a condition of restlessness and strain. There will be both civil and financial readjustments. The barometer must be read in terms of large affairs, and must sense disturbance from afar.

V

The real opportunities to buy securities are non-spectacular, among the familiar and well-tried companies. The occasional instances of great profit from venturing into new and untried enterprises are the exception and not the rule.

Spectacular and glittering offerings, in companies of more prospects than history, are made for the purpose of selling properties to the public at an

artificially high price. All stock issues of a distinctively flotation period, such as the consolidation era of 1899 to 1901 and the preferred stock epidemic of 1919, partake in a measure of this same characteristic. Stocks which become the fashion because of temporary booms in earnings are invariably purchased above their real worth.

The buying is better when the crowd is few, when the seller is not advertising, and when the values can be studied and understood from the annual reports. The opportunities of the purchaser lie among well-known conservative corporations, whose established financial policies are sound, honest, and provident, and which are devoting energy and prudence to building up their business. In order to appraise their securities the investor must analyze annual reports, grasp the progress made in meeting problems, compare one issue with another, and choose the greater value for the lesser price. The true reading of the published statements of account is the foundation of corporate investment.

A corporation report contains three main features. These are a balance sheet, an income account, and a profit and loss statement, with the accompanying explanatory matter.

The balance sheet is a schedule of assets and liabilities. The income account is a record of the earnings of the fiscal year. Profit and loss is a summary of debits and credits of special character, or pertaining to prior years; including occasionally current items, such as dividends, not stated in the income account.

The first two of these three statements are of the greater importance. The balance sheet shows the company's engagements and the resources wherewith to meet them. Comparison with previous balance sheets shows whether it is becoming stronger or weaker, where the money earned is going, what money has been borrowed and what received from sale of stock.

The income account, the most widely published of the statements, shows the results of operations, how much was earned on the stock and how much paid. It shows where the money came from, except that borrowed or raised on new capital. Although it furnishes an important half of the story, it does not reveal whether the earnings are in disposable cash, have been applied to inventories and receivables and reduction of debt, or have been locked up in new construction. The income account cannot be read alone, without the information given by the balance sheet.

The profit and loss account is chiefly useful as a check on income accounts, setting forth the subsequent corrections and alterations. Occasionally a substantial surplus is indicative of stock dividends, or other disbursement. But as a rule the figuring of book values, or prospects, from the accrued surplus is of little or no value. Surplus represents bookkeeping history. What is divisible to stockholders stands in the current accounts and cash of the balance sheet.

Methods of analysis of corporation statements have been published in a number of books, among which Woodlock's "Anatomy of a Railroad Report" and Greene's "Corporation Finance" may be mentioned as short and to the point. The subject is basic to knowledge of the values of securities. It would be impossible, in these brief pages, to do more than outline and summarize the main features of the simplest type of analysis.

The balance sheet marshals assets on one side and liabilities on the other, each divided into two principal classes, current and permanent. While every balance sheet differs from every other,

there are conventions of statement now generally followed, by reason of which they are the more easily read and understood. The order of the assets is usually permanent, current, and deferred, with pertinent subclassifications. The order of the liabilities is stock, funded debt, current and deferred liabilities, reserves, and surplus. The stock is not a true liability and the surplus is not a liability but a balancing figure.

First among permanent assets comes the Property account, or, with railroads, the Road and Equipment accounts. This is the plant from which earnings are derived. It is salable in liquidation or under foreclosure but is not disposable to pay the current debts of a continuing business. The value to the stockholder lies essentially in the earning power. Nowhere in bookkeeping is more latitude allowed than in the figure set up for the Property account. It usually represents cost (in terms of permanent securities issued for the acquisition, plus subsequent additions) and not an appraised, or sale, value.

The Property account is not cash in hand or liquid assets. Instead it consumes additional money for additions and equipment, or, if run down, for repairs. The earnings reported as available for the stock must always be viewed in the light of the proper requirements of the Property account. Nominal profits and disposable cash are not the same.

Additions to Property account may be shown separately, or they can be computed from previous balance sheets. They show the application of cash to the increment of the plant, from stock issues, from borrowing, and from earnings. In England additions are capitalized. In the United States a considerable part of them are paid out of earnings. No other course is safe under the conditions of rapid growth and severe depressions. Sound practice is exemplified in the motto of the Pennsylvania of former years, "A dollar for dividends, a dollar for improvements." Companies may be ranked, as to both safety and prospects, by their policy toward ploughing in earnings.

VI

The next item of assets is investments, a broad term. They may be permanent holdings of stocks and bonds of subsidiaries, representing cash advanced or retained for purposes of control. They may be Treasury bonds of the corporation itself, marketable or not according to the conditions. Or they may be strictly current assets such as Liberty Loan bonds. The value of the investments should be ascertained and the question answered whether they are a cash resource, an income producing permanent asset or a cash-consuming drain. Losses of subsidiaries may be concealed in this account, and in "advances to subsidiaries," as proved to be the case with Atchison 30 years ago.

Accounts and bills receivable should represent collectible items. The volume should be proportioned to the amount and kind of business done. Excessive receivables are subject to suspicion of inability to collect. Failure to write off for slow and bad debtors may pile up dead wood. Occasionally the losses of subsidiaries may be hidden as accounts receivable. The reserves set up for bad debts should be adequate, and the volume of receivables should be so proportioned to sales, or earnings, as to indicate an active turnover of collections.

Inventories, the next item, should be priced at cost or market, whichever is lower. The amount should bear a rather definite ratio to the annual sales,

according to the nature of the business. Railroads and public utilities carry comparatively small inventories, of materials, supplies, and fuel, for consumption. Manufacturing and trading companies carry larger inventories, of raw and finished goods, to be sold. Certain industrials, with seasonal purchase of raw material or sale of finished product, carry much heavier inventories at one time of year than another. Industrials of long manufacturing processes naturally keep larger inventories than those of short processes. What is normal to the business should be considered, and where there have been great changes in price the investor should be certain that the inventory has been thoroughly written down.

Industrials suffered tremendous inventory losses in 1920, in amounts running into the millions of dollars. There is always a price risk in the inventory and that is one of the reasons why the condition of these companies may change so radically and completely within a short space of time. The inventory situation can be checked up in a general way by comparison with other companies in the same line of business. It is useful, also, to estimate actual, or potential, losses by applying approximate prices to the probable quantities of the principal items. Even if the quantities are unknown a percentage adjustment may serve to show what are substantially the facts.

Cash on hand and in bank is one of the satisfactory items not subject to doubt. But the auditors' certificates should be examined, in the case of companies doing an international business, to see how foreign currencies are reported. Exchange losses, in the cash or in the receivables, may be hidden away and not disclosed.

Deferred items include prepaid charges such as insurance, discount on bonds, and notes to be amortized later under the rules of Commerce and Utility Commissions, debits to suspense, and doubtful assets held pending in hope of eventual recovery. This is ordinarily one of the minor categories.

The assets of every corporation have individuality and variety. Some companies carry "good-will," as a frank estimate of original water; others have large patent accounts, a less frank estimate of the same thing. Corporations desirous of making a good showing carry patterns, tools, jigs, and dies as permanent assets, while more conservative companies charge these to the cost of the first operations in which they are employed. Increases and decreases in the various assets are always informing. Thorough analysis will usually disclose the key to the character of the management.

On the liabilities side of the balance sheet the first item is stock. This is not a liability but represents the equity of the stockholders, has no due date, and does not require to be paid off unless the company is dissolved. The rights of the stockholders are inferior to the rights of the creditors. The value of the stock is the margin of protection for the company's debt.

VII

Bonds are long-term liabilities with due dates. At maturity they must be paid, or refunded. Prior to this the annual payments are merely those of interest and sinking fund. The holder cannot call for payment of principal until the time nominated in his bond.

Ratios of safety for bonded debt, in proportion to stock and to earnings, are still being evolved from experience. With railroads the proportion of bonds to stock has risen from an approximate equality, 20 years ago, to something over one-and-one-half times. The present ratio is recognized as unsafe,

and untenable. For the public utilities it has come to be an accepted maxim that bond interest should be earned at least twice over. Industrials must, to be safe, have a lesser proportion of debt than either railroads or utilities. But as with all credit ratings there are almost more exceptions than rules. Each case stands on its merits according to all of the factors.

Notes and bills payable are short-term liabilities with an early due date. Provision must be made for them. Occasionally, as with affiliated corporations, they may be construed as standing loans, but ordinarily the outstanding fact is that they must be paid. The source of payment should be looked to. If notes are to be paid only by issue, and reissue, of more notes, there is danger. The true purpose for which notes are put out, and the means by which they will be met, are a convincing demonstration of the condition, and policy, of the company.

Pay-rolls and accounts payable represent the ordinary bills of the business. Well managed companies take advantage of cash discounts and pay as promptly as possible. Companies that are running behind show it first in the slowness with which they pay bills and in the growing accumulation of accounts payable. This item is often symptomatic of health or disease.

There is no exact gauge of the proper volume of the current accounts payable. It varies with conditions. With most companies a normal figure for pay-roll does not exceed a two weeks' accrual of wages. For railroads and utilities the accounts payable may cover approximately a month's regular purchases of materials and supplies, but always subject to increase for special purchases. At present this limit has been sadly exceeded. Among mercantile and manufacturing companies the current payables may legitimately be much larger, according to the trade usage in extending time on purchases. At this writing industrials have high cost inventories still to be worked off, and many of them continue to lean heavily upon the banks. It is a general condition of weakness, and, in some instances, of danger.

What is known as net current assets, a rather important term, consists of the excess of current assets over current liabilities. In computing this the liabilities must be figured at one hundred cents on the dollar while the offsetting current assets are to be construed as good only to the extent realizable and available. Railroads and public utilities, with great fixed assets and nothing on the shelves to sell, carry comparatively insignificant net current assets. Industrials and trading companies carry in this figure a main essential of their business. It represents working capital, the margin of safety for bank borrowing, and the available resource for protection of interest and dividends. The progress of the net current assets of these companies should be observed from year to year, and the ratio the figure bears to loans and accounts payable.

VIII

Reserves are of two divisions, internal and external, and of three classes. Those for taxes, insurance, and dividends previously declared are external, presumptive liabilities, as being payments due outsiders. Those for depreciation, improvements, and the like are internal, not liabilities but appropriations from surplus. Those for bad debts, contingencies and other special purposes may be internal or external, and are not to be classed as liabilities so much as deductions from assets. All

reserves are set up through the income, or profit and loss, accounts, and will be more fully discussed a little later.

The Income account shows sales, or revenues, expenses of operation, taxes, balance of net earnings after these deductions; then the interest charges, dividends, appropriations, and surplus. It gives first the results of the business and second the use made of those results by the company. It is becoming increasingly customary to publish full and detailed periodical statements.

Both earnings and expenses were on an inflated basis during the four years 1916 to 1920. Railroad and utility operating ratios were fantastically high. Industrial and mercantile concerns, in spite of the expenses, retained an abnormal volume of net during this period. They have since lost much of what they made, while the railroads and utilities are struggling toward better earnings. It is a time of unusual difficulty in judging values from the record of earnings. To orient the view a look must be had at the pre-war figures, and the net current assets.

The sales, or gross revenues, represent the money volume of the business done. To be healthy a business should grow. If its vigor is lacking for this, shrinkage and decline are to be feared. It is most difficult to cut down expenses of plant and organization to fit a reduced business, and the usual result of a minor falling off in gross is a major falling away of net. The prices of the last few years have been so abnormal as to imply a much greater increase in business than actually existed. The record of volume must be made up from other factors. The present subnormal volume is to be accepted, with its losses, as a temporary condition.

Expenses are of two classes, those of doing the business and those of maintaining the plant. Good management is economical of the first and liberal in the second. Successful companies are those that keep tools sharp for work, replace old machinery and equipment with what is efficient, economical, and modern, and set maintenance before dividends. Companies on the road to failure yield to the temptation to make a showing by undermaintaining. In the end the costs of doing business run up according as the plants have run down. When the situation is faced there are arrears of maintenance to be made up, money to be provided for improvements and rehabilitation, and, if not outright disaster, then an era of struggle and no profits. The culmination of neglect of plant is usually sudden, a surprising shock to unobservant recipients of dividends.

IX

Units of comparison for maintenance expenditures have been evolved for railroads and the public utilities. For industrials a rough and ready check may be had by comparing one like company with another, by considering the amount of property to be maintained, its nature and the use made of it, and by observing which is the more freely debited for improvements, the property account or the maintenance expenses.

Maintenance and depreciation go hand in hand. Industrials vary these outlays according to earnings, being more liberal in good years than in bad. Railroads and public utilities have been compelled by a somewhat near-sighted governmental regulation to follow a less flexible system. Rates of depreciation have been worked out for property of different types, particularly since these rates have become important for tax purposes. It is necessary to consider the sum of maintenance and depreciation, taking them together,

it being immaterial which account is charged. Railroads, for example, depreciate equipment but not track. The aggregate of maintenance and depreciation debits determines the state of upkeep.

Taxes, based upon invested capital, have been unequal and it is difficult to determine whether they are truly stated and correctly calculated. The main reliance is the standing of the management and the repute of the auditors. While there have been occasional surprises, as in the case of the Kansas City Southern, the bulk of the established companies, with comparatively low earnings on the money put into the business, are not subject to vital tax corrections from the government audit, now four years behind. Tax questions loom large, as a rule, only for companies which have earned a high percentage upon their stock. Taxation upon business has been too heavy, has sapped vitality, and has become one of the larger factors in estimating the future of both companies and securities. At some not distant point the form of taxation must be changed, and the burden upon activity made lighter. The change will affect corporate securities, but some more than others.

The income after taxes and expenses belongs to the company, is applicable to securities, and to the building up of the business. The finances and management are revealed in the disposition made of this income. First, the interest payments should be easily carried, with enough left over to protect in bad years and to provide for growth in normal years. Second, the dividend payments should be well within the company's means, always leaving a margin for growth.

Interest payments are fixed and involuntary, once the debt has been incurred. Dividend payments are voluntary. Companies heavily laden with charges, or too rashly burdened with dividends, lack buoyancy against storms. The future, the basis of all foresighted management, is insufficiently provided for. It is a fact, of importance to the investor, that the stock of a company that defers dividends and devotes earnings to building up, is fairly certain to appreciate in market price; while no stocks are more dangerous and productive of losses than those which pay steady dividends and scant the ploughing in of earnings.

Industrials often follow the policy of adapting dividends to fluctuations of earnings, paying in good years and passing in bad. Railroads are slower to change and endeavor to follow a steadier course. This difference in policy is natural. While industrial stocks rise and fall with the dividend prospects, the changes in railroad dividends, when these take place, are of more serious nature and may entirely alter the character of the stock as an investment. In considering the earnings statements of any company the figures of from five to ten years should be taken, and the record observed as a whole, with respect to trend, continuity, and fluctuations, the amount kept in the business, and the amounts paid to security-holders.

A combined statement may be prepared from balance sheets and income accounts as an analysis of where the money has come from and where it has gone. It is a criterion of policies, an index of financial progress.

X

A statement of "Resources and their Disposition" is made up by comparing balance sheets at the beginning and end of a selected period of years, setting down the increases and decreases by items, and inserting the aggregate in-

come account for the period covered. Under "Resources" are tabulated the increases in liabilities and decreases in assets, together with the surplus earned. Under "Disposition of Resources" are tabulated the decreases in liabilities and increases in assets. The two columns should balance.

The result is a composite picture of proceeds of operation, merchandising, and financing, and of the uses to which these proceeds have been put. It is a searching analysis. It will show, on the one hand, companies of apparently ample earnings becoming reduced and in debt because the problems of growth have not been met with financial common sense and foresight. On the other it will show thrift, the clearing up of encumbrances and preparing for better days, by companies of small income. It demonstrates what problems have been met and how.

The consecutive building up of corporations, that in the end brings wealth to stockholders, is rooted in the maintenance accounts, the financial policies, and the growth of the business. If these three are a sound foundation the result, over a period of years, should be such an increase in net revenues greater than the increase of debt and capital that there is, finally, a geometrical increase in the divisible profits per share.

These are useful matters for the investor to watch. As to maintenance, opportunities to buy arise when earnings have become sufficient for liberal upkeep but have not yet been turned to liberal dividends. As to finances, when the working capital is being increased from earnings and the business is being developed without much issue of new securities, there is a similar hope and promise of eventual dividends.

The volume of security issues and bank borrowings, and the character of the financing done, are most important. Too rapid expansion by means of new issues is always dangerous, and may completely change the character of the investment, as in the case of the St. Paul, the New Haven, and General Motors. It always takes time to assimilate new construction and make it produce revenue to carry the cost. For that reason a company which borrows heavily for expansion during prosperous periods courts trouble when depression arrives. If it finances by stock, instead, the holders are, it is true, taking chances on the future profits, but have not the same risk of being wiped out. But if a company finances its progress as nearly as may be from its own earnings, without excessive issue of either bonds or stock, the chances of an assured future are in favor of the stockholders.

Each company has its financial character, its record written clear in its annual reports, which should be known before investing in it.

REVIEWS OF BUSINESS BOOKS

THE MANAGEMENT OF MEN

By Edward L. Munson, Colonel, General Staff (Med. Corps); Chief Morale Branch, War Plans Division; (Lately Brigadier General, General Staff). xiii, 801 pp. Henry Holt and Company

REVIEWED BY HARRY W. KIMBALL *

This is a book for army officers, intended to instruct them in the systematized stimulation of troops; but the book will prove invaluable to all who seek to build the morale of individuals or of groups of men. So illuminating is this book that the inevitable reaction upon the mind and will of the reader will be not only to make him a more effective leader but also to insure the increase of his own personal morale.

The definition of morale follows:

> Morale is fitness of mind for the purpose in hand. It is a sense of solidarity of strength and purpose, and ability to undergo in the accomplishment of a common cause. It is a state of faith. It is belief in ability to see anything through to a successful conclusion.

The attempt, however, of the author to link up his teaching regarding morale with industry is very crude. The book is concerned with the morale of camp and field, not of mill or factory. Here and there throughout the book are sentences which with slight variation say "this also applies to industry," but inasmuch as the author does not know industry with that close familiarity with which he knows the army, he is not able to give any very practical applications of the principles he sets forth. This fact, in truth, adds to the value of the book for the leader in industry, because it is productive of thought and stimulates the reader to think and imagine how the conclusions of the author can be made to work in the realm of industry.

Morale succeeds in the army when the individuals and the different units are welded together by a common spirit and when that spirit becomes a driving force which gives to men the bravery of heroes. The army then has a soul. It is psychologically victorious. In the making of an army, then, ideas are as important as armament. Morale in industry fails usually because we are rarely able to create that sense of solidarity, that harmony of strength and purpose upon which all efficient group action relies. Capitalist solidarity we have, and trade union solidarity we have, both fairly well developed; but factory solidarity in which capital, management, and men unite for efficient production and quality goods is still largely a dream. This book will aid mightily in making this dream come true.

It is a pleasant fancy that human nature can be comprehensively and effectively controlled by the scientific application of the fundamental laws governing human nature itself—and when these laws are applied by persons of unusual tact and personality, possessing the rare imaginative qualities of sympathy and fellow-feeling, then very remarkable results can often be obtained. Yet human nature has a most obstinate way of balking at all efforts of control. It revolts at dictation. The stories of the returning soldiers reveal that even in the army the building of morale was not an unqualified success. The point of view of John Don Passos' much talked of story "Three Soldiers" is doubtless an exaggerated and rather personal one but it is a sign of caution to all who think that men are to be controlled and directed, simply by the adoption of the methods suggested by a book like this.

One hundred pages are devoted to an analysis of the basic human instincts and

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to the possibilities of their use in the management of men. Naturally, since this is an army book, a large proportion of these pages are given over to the discussion of the instincts of pugnacity, self-assertion, and fear. Of curiosity, the author says:

> The instinct of curiosity is strongly implanted in the American, more so than in other peoples, as witness his pre-eminence in invention as a result of natural bent toward inquiry and investigation into the cause and betterment of conditions. He chafes in the presence of the unknown, and promptly accepts its challenge to discover its truths or to formulate a working hypothesis for its methods. This inquisitiveness is a quality, which, intelligently directed, makes for good, but which, if neglected or unduly repressed, makes for stagnation, resentment, and harm.

A natural application of this truth to industry requires the utmost publicity with the workers. The reluctance of many managers to tell their employees anything breeds distrust and obstinacy. The workers have an intense interest in the affairs of the company to which they give their strength and from which they gain their sustenance. They would like to know how orders are coming in, when overtime work is likely to be required and whether the plant is to work on a holiday or not. The value of bulletin boards kept up to date, and of plant papers in satisfying the curiosity of the workers, is very large.

One of the most interesting experiments in industry, ludicrous to the severely practically-minded, yet based on sound psychological analysis, is the use of music to secure contentment and increase efficiency. This use of music is of value because of the instinctive place which rhythm holds in human nature.

> The response to appropriate rhythm gives real pleasure. A powerful motive for the performance of otherwise monotonous action is thus created and its accomplishment stimulated. This explains the value of the drum and fife or the band in inspiring the men on hard marches. Brisk music at the end of a hard hike brings the troops in apparently fresher and in better spirits. It shows why music is a practical aid to efficiency, especially with respect to swaying and co-ordinating crowds, and why it should not be considered merely as a concession to enjoyment.

The psychologist believes that the industry of tomorrow will be far differently organized in its relation to the workers, because psychological principles will be used intelligently. Rhythm is a true instinct breaking forth in the chantey of the sailor, and in the songs of negro roustabouts, and it will find its place in industry. Already there are plants where the phonograph—not for recreation alone, but during the work periods—is standard equipment.

Another hundred pages is concerned with a discussion of the psychological qualities of men. Here is nothing new or startling but a careful and vivid setting forth of well-known psychological facts. Indeed the book becomes very near being an encyclopedia upon human nature in the light of modern knowledge. Especially good is the section on suggestion.

> Suggestion is the offensive arm of morale work, not only in meeting conditions of the present but in preparing for problems to come. Suggestion need carry no intimation of purpose. Its agency is thus invisible and it will be accepted unconsciously where direct methods of approach might arouse opposition. A concept of desired application to a specific purpose may be so developed in the individual that neither its source nor purpose nor the fact of acceptance may be recognized. In this way a man accepts and supports an idea as his own, not realizing that it came from outside and was not of internal and individual origin. This is because impressions of all kinds flow in upon him and all exert their influence upon ideas and acts. The individual does not have the power to automatically receive only such mental impressions as he might have decided he would like to accept. Those artificially and deliberately created present no difference in appearance or result than they would have if they had been the product of chance. But if suggestion is so clumsily conveyed as to show its artificiality it is at once resented.
>
> All persons are susceptible to mass suggestion, especially when supported by society as a whole, or by long tradition. This explains the human desire "to be with the winner," and the great group whose minds are predetermined by the acts of others. It explains the ease with which new material is mentally assimilated in organizations in which morale is high and the special rapidity with which recruits are imbued with the ideals of organizations possessed of long, honorable records and traditions.

The two chapters dealing with the human and civilian agents of morale control are essentially army chapters and have no relation to industry. It is worth while mentioning, however, that the army considers this whole subject so important that it provides a Morale Officer as a part of its staff. This officer fills very much the same place in the regiment that a personnel manager does in the factory. On the relation of the officers to the men two paragraphs are worth quoting.

The first thing, therefore, that a new commander should do is to establish a personal relationship with his men. Personal identification should be followed as rapidly as possible by study of each individual, both from the official data of his military records and from his appearance, personality, and actions. Squad leaders and morale operatives should be questioned as to the habits, characteristics, strong points and weaknesses of those with whom they are associated. By every means he will endeavor to recognize and place a relative value upon both virtues and faults. He considers his men not as pawns on a chessboard, but as living, thinking beings with interests much like his own. The wise commander recognizes that no two men can be handled to the best advantage in the same way, and that this basic estimate of his human agents is necessary to their most efficient use. Like a workman, he is familiarizing himself with the qualities of his tools.

Kipling grasped the fundamentals of proper military relationship between the non-commissioned officer and those under him when he said of the sergeant:

" 'E learns to do his watchin'
Without it showin' plain;
'E learns to save a dummy
And shove him straight again;
'E learns to check a ranker
That's buying leave to shirk,
And 'e learns to make men like him
So they'll learn to *like their work*."

All through the book there is an emphasis upon the truth that the men in the ranks must be treated as human beings. At this point many an otherwise good officer fails. At this point also many a foreman fails in industry. Modern classes in foremanship training stress this need of fellow-feeling and sympathy, but the average foreman is still far from learning the lesson that his men have feelings very much like his. Probably one of the most grievous faults among foremen is the practice of swearing at their workers. It is true that these oaths with which their speech is sprinkled does not mean much to them. It is only a habit of speech, often acquired in the environment of youth and signifying nothing except the paucity of their own vocabulary; and yet, oaths and vile language are resented by the workers and cause much feeling and bitterness.

Unquestionably, one great cause of discontent and animosity, and one of the factors in desertion, has arisen from the swearing at men in the ranks by their superiors. The individual subjected to it feels affronted and humiliated, and that his self-respect has been impaired in the eyes of his comrades if he makes no retaliation. As an insult, he may brood over it in secret or with his friends. If quick-tempered, he may resent it by disobedience of orders, assault, or other act of indiscipline. In any case, it will produce animosity, sullenness, and a passive opposition or lack of zeal which results in inefficiency. A too common result is a state of mind in which the condition seems not only irremediable but intolerable, and absence without leave or desertion may seem the only means of relief from the situation.

A friend recently informed me that after investigation he had found that during the industrial depression very few companies had given up their plant papers. This form of betterment work might easily be thought to be non-essential, and as the expense is considerable, little astonishment would be occasioned if these papers had been unduly suspended. But they have proved their worth in building morale. The plant paper has come to stay and the printing and editing of these papers will increasingly demand thought and care on the part of the personnel department.

The average soldier takes great pride in his camp or post paper, if it be a creditable one. No matter how small it may be, or how apparently unimportant some of its news items, it still wields much influence. The idea that, " I saw it in the paper, so it must be true," holds good in the majority of cases. Accordingly, camp papers should be recognized as military adjuncts of a social and administrative value.

Short and timely articles having a bearing on morale, through the conveyance of information, ideas, or suggestion, have great value, the men being left to draw their own conclusions from the facts presented.

The personal columns should not be overlooked, but be made as full and as attractive as possible. The men want to know what organizations are doing and what individuals are doing. To see his name in the paper, no matter how trifling the context to others, may be a matter of much importance to the individual concerned as a recognition of endeavor or social status.

The final chapter of the book is called "Industrial Morale." The author recognizes that the creating of morale in industry is a very different problem from the creating of a like spirit in the army. Commercial life is competitive and economic laws are at work which have no place in a military organization; yet industry must take note of the human qualities which are the energizing factors of the human agents. Industry must adapt the basic psychological principles of human nature to its needs. Industry is learning that here is an undeveloped field of endeavor. As the foreman said whose champion gang at the Hog Island shipyard set a new record for riveting: "According to my way of figuring, this thing called morale is blamed important." This chapter has many helpful ideas regarding the well-worn subjects of the prevention of absenteeism and of the reduction of labor turnover. Other subjects very suggestively touched upon are the productivity of the worker, restlessness, influence of environment, promotion, and selection of employees. If this last chapter could be reprinted as a separate pamphlet, it would be well worth distributing widely to executives and foremen. The 800 pages of this massive book close with these words:

Finally, as with soldiers, success in management consists in not only understanding the point of view of the workers but in giving an attentive ear and ready sympathy to their troubles. Encouragement succeeds where driving fails. Appreciation rouses a sense of creative pride which brings not only the hands but the personality to the work. What is needed is a spirit of service—not of servitude. In industrial relations, the "Golden Rule" is a safe psychological guide to establishing and maintaining such mental state as will express itself in the desired conduct, co-operation and productivity.

MINE ACCOUNTING AND COST PRINCIPLES

By T. O. McGrath. xiv, 257 pp. McGraw-Hill Book Company

Reviewed by John S. Lloyd*

The real motive back of the author in the presentation of this work is nicely introduced in the first sentence of the preface:

The present tax laws of most of the states and of the federal government require that accurate records be kept and that complete reports be made to the government of the results of each year's business. The employees of large industrial units are demanding that they be informed of the results of their labor, and be given a share either of the profits of the business or in the savings resulting from their increased efficiency or effort. The general public is insisting that, being the consumer of all products, the costs and profits of industry shall be accurately determined and made public. As a result of the gradual depletion of our richest deposits of minerals the mining industry is operating on a narrower margin of profit than at any time in its history, and must know its costs from month to month to protect against loss. Also, it is now recognized that a mining enterprise may be properly equipped with the best of mechanical appliances and have an organization of high ability and employees embued with the spirit of co-operation, nevertheless, the business cannot be intelligently managed without a knowledge of the results of operation and the condition of the business for each operating period, which information can be obtained only by proper accounting and costing.

Never in the history of the industry has there been such a demand for a strict accounting of all operations. To meet this demand, it goes without saying that a standardization of method in the account-

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ing of the industry would result in a uniformity, which would be most acceptable within the laws of all states where they operate, the federal government, and last but not least, the general public. The author presents a work applicable to practically all kinds of mining, suggesting a system of uniformity in accounting and cost procedure for all mines. The profession in general is quite conversant with the contents of this work, but it has been compiled to meet the direct needs of the accounting departments of the mining industry. It is a well-known fact that many of our operations have never taken the accounting department as seriously as they should, which in many cases has resulted in a general departure from the accounting principles underlying. The heads of many of our operations are not conversant with the relationship of accounting to the industry which has resulted in a gradual introduction of methods entirely foreign to the profession itself.

The author has taken plenty of time in his work to introduce the science of accounting in a most comprehensive manner, so much so, that one reading of the introduction acquaints the reader with the importance of having a knowledge of the basic principles of the accounting profession. On pages 2, 3, and part of 4 the author states:

> Accounting is not a collection of arbitrary forms, systems, etc., that can be applied to each and every business by means of double entry bookkeeping, of mathematics, accounts, forms, records, and systems in such manner as to determine and show true condition of a business and the actual operating results for any one period of operation in costs and the profit or loss.
>
> As accounting is concerned with the results of each of the departments of the business as a whole, it is necessary first to have a clear understanding of the fundamental duties of each of the departments—which from an operating standpoint may be set forth, as follows:
>
> The function in engineering is to furnish the technical information necessary to production and to design, specify, improve, and maintain the equipment, materials, and products; Purchasing is the obtaining, transporting, and storing of the materials; Superintendence is the application of the labor of the men and the use of the materials to the production of the product; Selling is the advertising, disposition, and distribution of the product; while Management is the co-ordination and regulation of all these operating departments into one harmonious, efficient working whole in conformity with the policies of the executive board.
>
> Finance is the obtaining and disbursing of the money to procure men and materials necessary to carry on production, the disbursing of earnings, and the banking and investing of surplus earnings and capital returned from production; the executive is concerned with determining policies and bringing of the business into a harmonious working whole in the conformity with market conditions of supply and demand, etc., so as to achieve the greatest profit obtainable to the best interests of the business and of all its working parts. While the above definitions may not be theoretically correct, they concisely set forth the duties usually assigned to the different operating departments in mining organizations of the present time. Engineering is considered to include the geological, assaying, mechanical, and power departments.
>
> In very large organizations there is the Advisory or Consulting Departments, covering legal, technical, and social or industrial sides of the business.
>
> This brings up to accounting which is not concerned with any one department of work but with the accounting for the money, materials, and product, and showing of the results each and every department of labor, both operating and administrative, and of the business as a whole.
>
> The relation of accounting to the executive and financial departments is advisory, the same as operating engineering is to purchasing, production and management. While engineering is of the first importance to purchasing and production, accounting is of equal value to engineering in management, and is of first importance to selling and finance, as the determining of the profits is the thing of first importance to every business, and the showing of costs, earnings, and the condition of each operating department of a producing mine is absolutely necessary to intelligent and efficient management.
>
> Therefore, it can be readily understood that any treatise that will set forth the principles of accounting, as applied to mining more clearly and in a more practicable manner will be of great benefit to the business of mining.

Such a book is valuable as the author quotes, "not only to the accounting department of an operation and to the heads of the various departments, but to every stockholder or person who relies upon the reports of directors and officers for his

knowledge of the business in which he has invested his money." That Mr. McGrath has a thorough knowledge of the mining industry is quite apparent because of the systematic manner in which he has arranged his book.

In discussing the purpose of accounting the author clearly states (page 7) that:

> Accounting efficiency cannot be obtained unless there is a definite idea of the results desired and of the methods of procedure. The purpose of accounting may be summarized as follows:
>
> 1. To verify and check, analyze and record, the business transactions and the operations in such manner as to show at regular intervals a true, correct, and intelligent statement of the condition of the business, and the results of operations in costs and earnings.
>
> 2. To furnish to the officers and to the different operating departments the results of operations for each period, within such time as to enable them to utilize the knowledge obtained therefrom in the succeeding period.
>
> 3. To summarize and compare the results of the operations of each period and report to the manager and directors the fluctuations when compared with previous periods.
>
> The check of the reports, statements, etc., of the business transactions and of the operations should determine the accuracy of each individual item, or operation, and the verification of each transaction or operation should be such as to reduce leaks, thefts, extravagances, omissions, and misrepresentations to a minimum.

It is most important in any industry that the purpose of accounting be fully realized, usually lost sight of in the rush of operations. If the head of an accounting department would read the first 15 pages of this book, he could not help making a survey of his own work, to discover for himself, how his department fits into scientific accounting. It is a pleasure to see such books as these come before the public. The real facts have been worked out by an author of experience and are not a mass of theoretical arrangement usually submitted for the use of the profession by authors of public practice. Regardless of how unimportant the accounting procedure for the promotion and development of an enterprise may appear to some persons, nevertheless, the author has splendidly summarized the operating transactions of capital development.

In opening the operating accounts of a mining industry, particular attention should be given to the proper classification of its operating accounts. It is almost an impossibility to arrive at accurate production results in cost and earnings unless there has been devised some plan or method for the proper care of operating accounts. For the industry heads who have had difficulty with this particular branch of the accounting department, the author's chapter on Operating General Accounting, will furnish sufficient data and information to enable them to meet the general requirements of their business. One of the best methods of procedure in any organization is with the use of charts. Throughout this entire volume the author has not lost sight of this very important part of an accounting organization.

The chapters on Production, Sales, Receipts and Disbursements have been well covered, having in mind at all times the proper distribution charge.

Depreciation is a subject of vital importance to every coal operator in the country. It is a factor having a direct bearing on the determination of his net income. Depreciation reserves should be kept so that they can be checked to each piece of equipment. On page 146 the author has well quoted:

> It is customary with mines to depreciate their construction and equipment at a certain fixed rate based either upon the estimated life of the mine or the estimated life of the bulk of the equipment when the life of the mine is greater than the life of the equipment, instead of upon the estimated life of each piece of the equipment. However, for the purpose of computing comparative costs, a record should be kept of the average length of life of each piece of equipment.
>
> Frequently the total value of the equipment is depreciated before the equipment is discarded or the mine depleted. In such cases only the new equipment is depreciated and the old equipment is salvaged and the amount received therefrom is treated as income.

Administrative Accounting in the main has to do with accrued and deferred debits and credits, and its importance has been lost sight of. Mr. McGrath has prepared some very interesting schedules and charts covering the organization of Administrative

Accounting, which would prove very valuable to any reader.

Administrative Accounting must be so thoroughly established if it would reflect the transactions of the administrative department of the business without any guesswork. The author again falls back on the use of his charts, which he has offered in a very generous style.

In determining the yearly income the author clearly states (page 177):

> The method of determining income from mines has gone through a process of evolution during the past five years, due principally to the requirements of recent federal and state tax laws and the development of accounting and costing procedure.

The costs of a mining industry are the most important factors which enter into the operation. The cost method to be used should be decided upon, the best method obtainable being the objective at all times. The author presents two principal methods of determining mining costs (pages 192 and 193):

> First: The Department Unit Method.
>
> Second: The Department Pro-Rated Method.
>
> The Departmental Unit Method divides each of the departments of the organization into sub-departments, and the sub-departments into units regardless of whether or not the sub-departments or units are productive or overhead, and segregates the expense into the proper elements and distributes the expense direct to each sub-department and unit.
>
> The Departmental Pro-Rated Method segregates the departments and distributes the expense in a like manner, but further divides the sub-departments and units into productive and overhead and pro-rates the expense of the overhead departments to the productive departments.
>
> The first method is similar to the Process Method used by manufacturing concerns, while the latter method is of a nature of the Order or Production Unit Method used in manufacturing when making more than one article for sale when it is necessary to get the exact production cost for each article in order to determine the proper selling price. However, in mining where there is usually only one principal product with sometimes a by-product which is treated as a credit, the Pro-Rated Method is not necessary and only increases the amount of bookkeeping and segregates, and makes the costs more complicated and difficult to comprehend and analyze. The Departmental Unit Method is the one best adapted to mining and will be the method illustrated. However, the accountant should be familiar with the Production Unit Method which is useful in determining economic costs.

Periodic cost statistics are absolutely essential. In this connection Mr. McGrath states that (page 248–249):

> STATISTICS
>
> In order to analyze properly the results of operations in costs, efficiency, etc., for any period of month or year, it is necessary to compile monthly and yearly statistics of costs, efficiency, earnings, market prices of metals, etc., from the beginning of production to date. The statistics will need to be of such nature as to meet the requirements of each business. They should not be too much in detail but more of a general nature, so that the increases and decreases from month to month and year to year of the principal factors, of costs, efficiency, earnings, etc., can be quickly ascertained and the tendency towards higher or lower levels of costs or earnings can readily be seen and explained.
>
> Without the proper statistics for comparison with the results of each period, it is difficult to analyze the accounting and costing data, or make a proper report of the results of operations for any one period.
>
> ECONOMIC ACCOUNTING
>
> After the accounting and costing procedure have been firmly established and accurate costs are being obtained, attention should be given to determining mine, mill and smelter losses at different prices of metals. When the market prices of metals are high the losses are much greater than when metal prices are low. When metals are high the problem is to obtain the best possible economic recovery. But when prices are low, it is sometimes better to get the best possible cost at the expense of a high recovery. At times the gain in cost is more than offset by the increase in losses. The most economical cost is not always the lowest cost, neither is the highest recovery always the most economical one.
>
> In some instances a standard of mill or smelter recovery or costs is set on low prices of metals and adhered to even when the price of the product has doubled.
>
> The solving of these problems requires great pains and a close working contact between the accounting, production and engineering departments, and is a field of activity in which a

great deal of intelligent effort can be exercised to the benefit of the industry.

Forms

Forms are a necessary means of obtaining uniformity in accumulating accounting and cost data, and should be so constructed as to conduce to efficiency and the obtaining of correct data without duplication.

Forms improperly drafted and ruled are always a source of annoyance and result in waste of time and material, and the compiling of data improperly.

The forms illustrated herein are only the more important ones used in operations. They have been arranged in the order in which they are compiled in actual operations of a mining business. However, as the requirements of each business and the methods of mining and disposing of the products as well as the laws of each state, etc., are not uniform, it is impracticable to construct forms that would be applicable to all classes and kinds of mining.

The presented forms are simply complimentary to the text and for use of mines of the nature designated, but of course, can be used as guides in drafting forms for mining operations differing in methods of operation or character of products.

In drafting a form the principal considerations are to obtain the rulings and arrangements that will allow the compiling of data with the least effort, and that will give all the information desired or obtainable. However, other considerations are the quality of the paper, the size of the form that can be cut with the least waste, and that the columns are neither too large nor too small to accommodate the data to be compiled and that there is no duplication of information contained on other forms.

A careful consideration of such matters will result in large savings in the purchase of supplies as well as in labor of compiling.

Some of the forms presented are of great value as they have been worked out after careful experimentation and much thought and experience and will result in saving of labor and time and the obtaining of facts in a clear concise manner by anyone having use for them.

Each form should bear a heading concisely stating for what purpose the form is to be used. Some forms herein do not bear the proper headings, but have been presented as they have been drawn.

Some of the forms are original, while others are more or less standard in mine accounting practice.

In this excellent work, the author has presented a very sound exposition of the subject. It might be criticized in a few places without any immediate good, because the same terms are very extensively used by authors for other volumes. Mr. McGrath has pointed out, so well, the most important factors entering into his subject, that he is not deserving of criticism. His book, therefore, is one to be commended and deserves to be widely read by the profession.

THE PROBLEM OF ESTIMATION

By Correa Moylan Walsh. 144 pp. King and Son, London, P. S.

Reviewed by Irving Fisher*

Mr. Walsh is the author of "The Measurement of General Exchange Value," one of the chief classics on the subject of index numbers. The present book is partly a condensation of "The Measurement of General Exchange Value" and partly an extension of its ideas to other problems than that of index numbers.

Nevertheless the chief interest in the present volume centers, I think, in the author's discussion of index numbers. It is largely taken up with a discussion of the geometric mean as contrasted with other means.

Mr. Walsh has delved deep in the lore to be found in libraries on this subject and has unearthed an interesting old discussion of Galileo on "the problem of estimation."

Mr. Walsh begins his book by giving the arguments of Galileo and his opponent, which are very entertaining. This old problem reads "if a horse worth 100 pounds

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is estimated by one person at 1000 and by another at 10, which of these two estimates is the less erroneous, or are they equally erroneous?" According to one view 10 is much nearer the truth (100) than is 1000, the difference in the first case being 90 and in the second, 900. According to another view they are equally distant, one being 10 times as large and the other 10 times as little! Galileo took the latter view and Walsh approves.

In the part devoted to index numbers, Walsh (page 102) confirms my views expressed in the March Number of the Quarterly Publications of the American Statistical Association on the best formula for an index number although his method of arriving at the result is quite different from my own. It is interesting to observe that Allyn Young of Harvard in the August number of the Quarterly Journal of Economics in an article entitled "The Measurement of Changes of the General Price Level," has reached the same result from a different angle.

Walsh's argument is largely that the formula in question comes nearest to satisfying Westergaard's test, that is the so-called circular test that any index number should, if calculated from one year to another and from the second to a third and so on in a chain, give the same result as though calculated directly from the original base to the last year.

In my forthcoming book on Index Numbers, to be published by the Pollak Foundation for Economic Research, I propose to show that, while index numbers which come near to satisfying Westergaard's test are better than those which fall far short of satisfying it, nevertheless there is an irreducible minimum of discrepancy which is not only inevitable in good index numbers but commendable. Much of Walsh's work in index numbers has beeu in the search for a formula which will completely fulfil Westergaard's test. The truth is that no such formula exists; at least not one which has different weights for each year to year comparison.

But the search for such fulfilment, while in vain in the sense of being unsuccessful in its object, has nevertheless not been fruitless; for Walsh has laid secure foundations in this subject, which he was enabled to lay by virtue of his search for the impossible.

MODERN BUSINESS WRITING

By Charles Harvey Raymond, A. B., Harvard, In Charge of Instruction in English in Business Practice, University of California. x, 476 pp. The Century Company

REVIEWED BY M. C. KING*

Executives who are looking for a complete manual of business principles, psychology, and advice as applied to business writing, which they can hand to the young person with an academic background just entering their organization or department, will find "Modern Business Writing" a valuable aid for saving their own time and energy in explaining the business writing policy of their own house. Business writing for all occasions and from all standpoints is discussed and illustrated from the modern psychological viewpoint. The book is rich in illustrations of real, effective advertisements and letters which different well-known corporations and organizations such as the International Harvester Company, the Hudson Motor Car Company, the Beech Nut Packing Company, the Burroughs Adding Machine Company, the Columbia Graphophone Company, Lord and Thomas, and the Indian Packing Corporation, have allowed the author to use.

For the correspondent new to business writing, enthusiastic and anxious to make

*Formerly with the Advertising Department of Armour and Company, Chicago.

good in the organization, and who, moreover, is used to textbook study, the executive will find the book especially adapted. He will save much of his time by handing the book to members of his department and asking them to study it. But should the correspondents be men who are more or less unfamiliar with academic study, who have earned their position in the firm through long and practical experience, who are somewhat set in their ways and impatient of school and theoretical maxims, the book may be too academic in tone. Then, too, for those familiar with the business methods of the past few years, the statement in the foreword that, "Attention is just now being generally turned to the rich possibilities, heretofore neglected, of effecting sales direct-by-mail," will strike them as nothing new or startling, and they may accordingly question what new service the author will offer.

Nevertheless, the book is one which any executive would be wise indeed to place on the shelves of the office library or offer as a textbook of business writing to an alert, young, ambitious, but new correspondent or department assistant.

Much is accomplished by the excellent arrangement of the text—the division into two parts of the kinds of business writing—Part I, the Selling Appeal, and Part II, Everyday Letters. The author makes it clear that these two operations are closely linked together when he says:

> Everyday letters, in fact, are now generally regarded in the light of sales letters. . . . The adjustment letter is properly regarded as a sales letter in that it is the effort of the correspondent not only to adjust the difficulty but also to "re-sell" the dissatisfied customer.

An attractive feature of the book is not alone the rich store of examples, but the quotations culled from business maxims of well-known corporations and financial authorities. Each chapter is prefixed by an outline showing the special points to be made. Then these points are emphasized and time and again amplified in an effort, through constant repetition, to teach the reader the principles shown.

Naturally, under the selling appeal, both sales letters and advertisements are discussed and amply illustrated. Proceeding psychologically, Mr. Raymond begins his first chapter with the discussion of the prospect, and sets before the student, the now commonly accepted business theory "to put oneself in imagination in the place of the prospect or person to whom one is writing." To do that, he quotes at the beginning of the chapter from Lord and Thomas' "Real Salesmanship in Print":

> The safest way is to meet in person the average person whom one meets in print. A house-to-house canvas develops selling arguments quicker than anything else.

To sell through letters or advertisements, one must subordinate all one's own selfish desires in the appeal and satisfy and appreciate the selfish desires of the prospect whom Mr. Raymond thus describes:

> In the light of his own personal needs and desires, each individual prospect classifies products that he is asked to buy. Products that enable him to meet a need, he automatically classifies as necessary; products that enable him to gratify a desire, as desirable. Products that come neither in the one category nor in the other, he classifies as unnecessary or undesirable. His interest in your selling appeal is, necessarily, a selfish interest. . . . Your problem, first, is to determine definitely the dominant interest of the prospect in question, and, then, to emphasize that merit of your product which will meet most directly this particular interest.

This description of the prospect is then followed by advice as to ways and means of learning the needs and desires of the prospect and of correctly classifying and tabulating him. The policy of the close relationship between salesman and correspondent, in use with most big corporations for several years, is discussed. The different classifications and means of securing the classifications according to occupation, locality, sex, etc., are illustrated and will save the executive who gives this book to members of his department much time which he might otherwise have to spend in reiterating these valuable suggestions.

Next in psychological order of selling importance is, of course, the product, and here Mr. Raymond states the rule which is of prime importance to every business organization and for whose application every

efficient big business organization in the country is equipped with a large house library telling of the product and the organization. To illustrate he says:

> Enthusiasm—confidence—the ability to present facts in the direct, convincing manner that grips the attention of the prospect—these important factors in the selling appeal are born only of full and detailed knowledge concerning the product which you have for sale, a knowledge that results in a staunch belief in the concern manufacturing the product.

In drumming home this point, here again in opening the chapter, Mr Raymond thus quotes from a well-known business authority, George W. Coleman:

> The facts in the case are good enough for any letter, much better than the most radiant "moonshine" and much harder to get. First get the facts: then get all the facts. Don't guess, don't imagine, don't infer; just dig, dig, dig for the facts.

After one has the facts, then Mr. Raymond advises to:

> Select such facts concerning your product as will most certainly show the prospect an opportunity for either gain or enjoyment; that you may express these facts in simple terms that he can understand, and link them with his daily experience, showing their application to his daily tasks.

To be able to translate these facts into news value, to add dramatic interest and to make one's writing live by the use of imagination is the keynote of this chapter. We see that imagination, scoffed at in years gone by, as an imposter in practical business is recognized as a vital factor by hard-headed business men today. Examples of advertisements vital and alive through the imagination are given, and so good and effective are they, that even while mere examples of advertising writing, they serve as positive inducements to buy the articles which they are advertising.

In Chapter III, the central selling point is discussed. Mr. Raymond quotes from William H. Ingersoll's "Letters that Make Good" to explain the central selling point:

> The thought is the kernel around which the whole letter is written. It is the essence of what is to flavor the compound. The thought can be expressed in a single sentence when once it is understood, yet to be fully comprehended in its various relationships affecting the purpose of the letter, it needs amplification and elaboration. And the entire letter is merely this necessary amplification. When finished, it leaves the one vibrant thought, without confusion or mixture of ideas.

Slogans are discussed in this chapter, then the qualities under which one must classify one's central selling point, such as, economy, endurance, healthfulness, comfort, exclusiveness, and the sort of appeal which each central selling point may make to different types and classes of people.

The principles of the selling appeal by suggestion are next outlined in a most interesting and effective manner for the reader who is more or less familiar with psychology and race development, but would probably not reach the practical minded, routine office person who had never become interested in these studies. For such a person, the approach would have to be simpler and less academic in tone. The two mental processes through which the business writer must work are the reasoning or deliberative process and the suggestive or instinctive process.

Suggestive or instinctive appeal is explained through the principle of the association of ideas. Then and not until then, does Mr. Raymond introduce the much reiterated business maxim of always avoiding unpleasant and negative suggestions. Following this, however, the principle of positive and pleasing suggestion along with a personal feeling for the prospect is consistently emphasized throughout the remainder of the book. Advertisements are often the most successful when they appeal to the basic racial feeling. This, practical business men have learned to be true, but whether or not their appeal was always analyzed and conscious is doubtful.

This appeal to racial inheritance is all the more strong because of its widespread influence, especially when:

> In the case of an appeal calculated to awaken feelings of parental love, or of ambition, or of pride, or of similar feelings, based upon racial experience rather than upon personal experience, the awakened memory naturally will influence all classes of prospects very nearly alike, since all share the inheritance of racial experiences.

Even in arousing pleasing feelings and emotions for selling purposes, there are some timely words of advice that the Pollyanna type of advertiser might do well to read:

> Therefore, in depicting characters who are enjoying the uses of our product, let us not make their expression so "pleasing" that it will be unnatural. It does not suit the purposes of our selling appeal to depict mother, father, and the children rushing into the dining-room with every manifestation of extreme and uncontrollable joy, to hail the appearance upon the breakfast table of our brand of coffee, or of our brand of breakfast food. The prospect can tell at a glance that this scene is not true to life, that the appearance of our brand of coffee, or of our breakfast food on the breakfast table cannot reasonably be expected to give rise to such deep emotions.

Continuing to explain the suggestive or short circuit appeal he adds:

> Therefore we ordinarily must awaken the memory by suggesting to the prospect some pleasing idea which is separate and apart from our product and which idea, the prospect associates with his past experience more intimately than he does our product. Once this memory is awakened, our task is so to shape the pleasing feelings accompanying its awakening that the prospect naturally and immediately will attach these feelings to the product itself, and so will regard the product as desirable. This task we accomplish by a method of comparison based upon the law known as the Law of the Fusion of Ideas.

Repetition of a positive idea is often most effective in the trade name, trade slogan, or figure illustrating the product and causing it to be immediately known and identified. No one will deny for a moment the selling power of a well-known and well-advertised brand which has consistently given back good value for value received.

Negative appeal should always be avoided except in cases where it is necessary to appeal to the instinct of fear, where it seems necessary to shock the reader into either investigating or buying the product.

> Insurance companies, however, and manufacturers of certain lines of products—automobile tire chains, fire extinguishers, and similar safety devices—are forced to resort to negative appeal. This results from the fact that human beings are prone to neglect steps that will safeguard the future, and are inclined to "let tomorrow take care of itself." Hence, negative suggestion acts as a shock to awaken us from our lethargy. The negative appeal, for its "shocking" effect upon the prospect, is sometimes effective, after positive appeals have failed to impress the prospect.

In the chapter which discusses instincts, those upon which the seller is to base his appeal, are the three general classes of instincts under which he groups all his other classifications such as imitation, ornamentation, pride, play, comfort, curiosity, and others. Then he lists products as examples which may offer a special appeal to certain instincts and the facts which should be emphasized as central selling points in the appeal.

Very clearly and concisely is the difference between the advertisement selling appeal and the sales letter explained.

> The appeal in the advertisement is aimed at a more general class of prospects, than the appeal in the direct sales letter, and notwithstanding this, the appeal is made to match, as nearly as possible, the desires of readers it hopes to influence.

In the appeal through the process of deliberation, the writer must expect comparison, he must even invite it, but in such a way that the comparison will result favorably for the product. To accomplish this aim the selling appeal should be planned in accordance with the following steps:

> (a) Win the prospect's acceptance of a standard of comparison by which he may judge between your product and competing products.
> (b) Show him that, judged by this standard, your product is superior.
> (c) Cause him to act upon the basis of the decision formed by (a) and (b).

In many cases where the deliberative appeal is used it is necessary to conduct a selling campaign. This, both by precept and example, Mr. Raymond very concisely explains. However, he sounds this note of warning:

> The danger of overdoing the element of "education" (unless you have a monopoly) lies in the fact that you carry a double selling burden, i.e., you are pushing the sale of tractors as a class — the sale of your competitor's tractor as well as your own.

In deciding the nature of the appeal, he comments as follows:

The specific process by which the prospect arrives at a buying decision has direct relation to the nature of the product.

Products may be serviceable or they may be of the nature of a luxury. In the purchase of a luxury, the memories and impressions stored in the subconscious mind, when once awakened by Suggestion, will likely impel the individual to act upon instinct. But not so, if the product is essentially of a serviceable nature, a product that promises gain in dollars and cents. In this latter case, the individual, before investing his money will weigh carefully the advantages for and against purchase, and employing his reasoning mind he will arrive at a buying decision by the process of Deliberation.

The appeal by suggestion is designated as the "Short Circuit" or "Human Interest Appeal;" the appeal which is based upon the principles of deliberation is known as the "Long Circuit" or "Reason Why Appeal." Articles in the list which are most successfully sold by the short circuit appeal and prospects to whom they may be most easily sold are classified according to the sort of appeal which will be likely to be effective with them.

Women are characterized as—and buying statistics may bear out the characterization—:

Emotional in nature, they are more likely to respond to the appeal to the emotions and instincts than are men. Business men and farmers and other men of practical dispositions are less responsive to the emotional appeal than are writers, actors, and musicians.

That, however, is no reason why the two appeals should not be combined effectively and successfully in a strong selling letter or advertisement. In a concise, well outlined chapter, the steps in the selling appeal are outlined and defined. These steps are considered both for the advertisement and the business letter. Three types of description of a product are explained; direct, by make-up, and use. Conviction, proof, and action are then considered. Under action are classed the clincher, and inducement in the argument and examples of these forms are offered.

As a test for the effectiveness of the description and explanation in the reason-why appeal, Mr. Raymond advises:

Erase the name of your concern from your advertisement or letter, and substitute the name of another concern in the same line of business. If the selling appeal, with the competitor's name substituted, is equally effective, your description and explanation has failed to serve its purpose. It has consisted simply in a blanket and general claim that any manufacturer can make for his product, rather than in a definite and specific claim that brings out some distinctive feature characteristic of your particular make of product. . . . Your best plan is to emphasize the merit of your product that will most readily show its superiority over competing products; then, when the prospect makes the comparison that he is certain to make, the result will be favorable to your product.

Some of the chapters consist largely of repetition and emphasis of principles further amplified by examples. "Description and explanation," Mr. Raymond tells us, "is the element of the selling appeal that mainly is employed in the appeal to the senses." Exhortation, he thinks, can also be used in the appeal to the emotions, but this more guardedly.

A maxim of well-known importance is that quoted at the beginning of Chapter XII from the "Instructions to Correspondents" of the Goodyear Tire and Rubber Company:

The beginning of the sales letter or advertisement should definitely point the way to the prospect's profit, pleasure, or satisfaction. Many beginnings have proved ineffective because they have presented a general claim from the standpoint of the concern attempting to sell the goods, rather than from the viewpoint of the prospective purchaser.

Advice against the use of ultra radical or scare head advertising and writing is given, advice generally applied by most conservative firms, yet which does not mean to avoid the attractive or interesting appeal.

After a successful beginning has been made, description and explanation enter into the appeal. This would be part of the classification of interest and desire in the general outline given in a previous chapter. Excellent examples of description and explanation are quoted and the essential quality or point brought out is that the product should not only be described from an intimate acquaintance with it and a large en-

thusiasm for it, but from the standpoint of the prospect as well.

Selection of effective words is discussed and words which should be avoided, listed. Figures of speech and imaginative writing are highly recommended and advertisements are quoted which so live that one might almost say they are works of art through the use of figures of speech illumined by imagination. Mr. Raymond advises us to use certain words which he reminds us bring about pleasing associations.

Proof is the next step in the sales letter or advertisement and the usual methods of proof are outlined and amplified in the chapter by illustrations. "Proof by test," Mr. Raymond is sure should observe these three rules:

1. Be certain your product will stand the test.
2. Be specific in your instructions so the prospect will know how to make the test.
3. Be clear in telling the prospect just what results he may find from the test.

Persuasion, inducement, and clincher are the next steps of the selling appeal, considered in separate chapters. In persuasion, Mr. Raymond believes, as do most business men today, that it is the "you" attitude which is to be emphasized—the vitally personal appeal. The chapter is filled with examples of personal appeal illustrating the "you" attitude.

The definition for inducement is concise and to the point:

> An inducement is an added reason for purchase. Its purpose is to stimulate to immediate action. It has no concern with the merit of the product; it simply presents a concession, and this concession relates to the conditions under which the product may be purchased. It offers a reduction in price, or payment on easy terms, that lightens the financial stress of purchase; or it offers a special service that will increase the benefit and thus will assure to the prospect value in full for his money.

To cause the prospect to act at once, the clincher, as Mr. Raymond calls it, is used. This, he outlines as containing three elements, summing the central selling appeal, making it easy for the prospect to order and the psychological urge to do it now. Examples of each element are given profusely, actual examples taken from the business writing of many well-known organizations.

A set of don'ts which any executive will find useful in his office culminates this chapter on the clincher, for the maxims which apply to the clincher will apply more or less to the whole appeal. The mental paths of least resistance are next classified, explained, and exemplified, for the author feels sure that the letter will make a clearer impression if developed along one of these lines. The business person is practically more or less familiar with these paths, although he may not possibly have analyzed them before. This Mr. Raymond does very clearly.

Tone is another important quality in the selling appeal—tone which he describes:

> Above all things else, the tone of the business letter and that of the advertisement must be natural. As in conversational English, the tone of the speaker reflects his own individuality while taking cognizance of the character and individuality of the prospect, and of the nature of the product. . . .

In order to do this, the author continues:

> Choose the sort of words that the prospect is accustomed to using; words of some dignity, in the case of a man in a position of responsibility or influence; simpler words, those in common use, in the case of the average man. But make this choice a natural one, as you instinctively would do in conversing with one type of man or the other. At all times, avoid using "for effect" unusual words that are foreign to everyday usage. The best plan is to visualize the prospect, and then to write to him as naturally and as forcefully as you would talk to him were he seated across from you at your desk.
>
> The sort of words you use will vary somewhat with the product you have for sale as well as with the prospect to whom you write. Employ short simple words in selling the average product that meets a need. In selling an expensive product one in the nature of a luxury, give your letter a more "dignified" tone. This dignity is acquired by the use of somewhat longer words.

Valuable hints as to the sources for compiling the mailing list are given as well as different means of testing the pulling power of an appeal. Different principles underlying the writing of follow-up letters are explained and many examples of the follow-up letter quoted. Types of business letters of many and different purposes are quoted and

explained—quoted for careful study by the student or correspondent anxious to become more efficient.

Miscellaneous advertisements are also thus presented for study and analysis and reasons given for employing different kinds of advertisements. They are thus classified according to purpose:

1. You may employ advertisements aimed at firmly fixing your trade name in the mind of the buying public, and aimed at keeping it fixed there, rather than aimed at telling in any detail about the merits of your product.
2. You may emphasize in your selling appeal the character and reputation of the firm behind the product.
3. You may educate the public in the customary uses, and in the care, of your product.
4. You may educate the public in hitherto undeveloped uses of your product.
5. You may assist your dealer, or your representative in disposing of the product.

Part II considers everyday letters, gives pertinent principles and many examples, is admirably arranged for careful study—each form is given a separate chapter and discussion, as—writing the everyday letter, letters of personal information, letters of inquiry, order letters written by the buyer, order letters written by the seller, adjustment letters, credit letters, and collection letters.

Avoidance of trite phrases, expressions and thoughts, the prime business principle of courtesy, the "you" attitude and the positive impression are again and again reiterated and emphasized. Not only do antiquated phrases weaken a letter, but their omission, the author states, "has saved the B. F. Goodrich concern $22,000 yearly."

Letters of personal information are classified in the outline as letters of:

(a) Introduction
(b) Application
(c) Reference
(d) Recommendation

They are discussed and exemplified accordingly. Under letters of application there are examples of two principal types, the straight application letter giving concise information and the letter of application in which the writer tries to "sell" himself and his qualifications. Both seem a little extreme, it might have been well to have shown letters having combinations of both qualities modified.

Brevity and definiteness are the qualities most needed in letters of inquiry. These same qualities apply to order letters which are divided into letters by the buyer and seller.

Those written by the seller may lead to other orders as well as acknowledging the buyer's order. Both are treated in such a manner as to bring increased good feeling between firm and customer. Tact, cooperation and service are emphasized.

The excellent business maxim is quoted:

> Take up business problems and annoyances with the earnest desire to extend to the prospect or customer every possible courtesy and service, to deal with the "other fellow" in a fair, square, and manly way, and many, or perhaps all, of the disagreeable features will fade away.

Tact is again emphasized as a leading quality in the adjustment letter, whether the firm or the customer is at fault. Here, of course, the "pleasant" suggestion applies forcibly. It would be wise for correspondents in adjustment departments of different firms to study this chapter carefully. Many who have carefully learned other principles of business letter writing seem to have neglected this phase, and if for no other reason, the executive should have this book in the office library with this chapter on adjustment letters marked and underlined. Business correspondents in adjustment departments should memorize the quotation given at the beginning of the chapter from "Bulletins to Goodrich Correspondents."

> Remember, a letter adjusting a complaint of a customer should open by agreeing with him in something. It might agree that his experience must have been annoying, or express confidence that a satisfactory adjustment will be made, but it should begin with some sentence that brings the customer and the house closer together. An explanation of the facts should follow; then the concession the house is willing to make; then the conclusion.

The adjustment letter is, moreover, fundamentally a sales letter for its purpose is really to re-sell the man to whom the goods are sold. Many companies make big sales and friendships on such letters.

Credit letters and collection letters require perhaps the most delicate tact of any in the organization, yet one often finds these the most coolly and formally impersonal. Here again, the executive would make no mistake in underlining and marking this chapter for special study by members of the department of credit and collection. Examples are given of letters tactful, humanly personal, yet firm and thoroughly businesslike. The reasons for credit are analyzed as well as the credit and collection letters themselves. Much light is given on the management of modern credit and the "etiquette" of collection. Examples of the four letters grading from a courteous reminder of an account overdue, to a sharp and severe appeal, which are usually sent before drastic action is taken are given and analyzed. Different appeals in collection letters are resorted to, such as fair play, pride, and only at the last, and most extreme resort, fear.

If an executive wishes to save time and much discussion and talk, he will find it most convenient to ask each member of his department or organization who has anything to do with modern business writing to read and carefully study Chapter XXXI, containing house instructions to correspondents and general instructions. It might even be well, if he could gain the publisher's permission to have booklets or reprints made of this special chapter. It is most valuable and compact, for there are pertinent and well-outlined house instructions from different firms and corporations such as the Chalmers Motor company, Crane Company, B. F. Goodrich Rubber Company, Lord and Thomas. One of the most valuable features of this chapter is the list of words and expressions to be avoided, a list compiled from lists made up by the Goodyear Tire and Rubber Company, Chalmers Motor Company and B. F. Goodrich Rubber Company.

For an explanation of the mechanics of letter writing the last chapter is both broad and inclusive. The many examples of correct form letters written for different purposes and occasions will bear careful study. Mechanical makeup is explained and form and etiquette in business letters made clear.

Taken all in all, "Modern Business Writing" contains a wealth of example as well as precept, but it does, however, seem to be written from the standpoint of the scholar studying the question from the scientific, inductive viewpoint; a careful, conscientious and accurate report gathered from a great deal of observation, information, and data. So much does it give the impression of the scientist that one feels that Mr. Raymond is examining the organism called modern business writing under the microscope, rather than being a vitally interested part or exponent of it himself. The student of textbooks, accustomed to having his information conveyed in this manner will find it helpful, even invaluable, however the administrative business man may regard it.

Executives, men with broad vision as well as practical sense will wish to have it in their house library, for every organization, every department is made up of men and women with the textbook background as well as those with the experience background, both exceedingly valuable to any business organization, qualities worth much more when combined.

THE ORGANIZATION OF THE BOOT AND SHOE INDUSTRY IN MASSACHUSETTS BEFORE 1875

By Blanche Evans Hazard. x, 293 pp. Harvard University Press

Reviewed by Malcolm Keir *

Shoe manufacture, which before the Civil War was almost entirely carried on by handwork, and now may be completely conducted by amazingly efficient machines is bound to hold absorbing interest for the business economist. Since the change in

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the organization of the shoe manufacturing business came about so quickly that there are now men living who remember the installation of the first important machines, the shoe industry has been taken most frequently as the microcosm by means of which analogous but more slowly developed industrial revolutions may be understood. Yet a minute description of the revolution in shoe manufacture has never been given until Miss Hazard undertook the task in this book. In preparation for her work she painstakingly recorded the recollection of old men and women who had made or distributed shoes under the handwork régime. She also documented the pages of account books kept by the old-fashioned shoemakers or storekeepers, and listed valuable addresses or figures of pay and prices taken from letters or bills preserved in family safe deposit boxes or stored in ancient attics. All these together with the written works of local historians, Miss Hazard collected and then analyzed. From these sources (many of which she has incorporated in the book by means of an appendix) she has crystallized an authentic, detailed, unrivaled story of the shoe industry.

As a result of her labors, the author found that the development of shoe manufacture passed through several recognizable phases. As she says:

> In the boot and shoe industry of Massachusetts before 1875, four stages of production may be definitely traced. Although the stages are distinct as to characteristics and essential features, they are not so as to time, for overlaps and survivals occur. The household economy or *Home Stage*, for instance, characteristic of frontier conditions, was early followed by the *Handicraft Stage*, which prevailed until the middle of the eighteenth century. The *Domestic Stage* of industrial organization, with its successive and overlapping phases, was well under way before the Revolution, and lasted to the nineteenth century, giving place, about 1855, to the *Factory Stage*, which passed into its second phase by 1875.

This grouping determined for Miss Hazard her chapters, for she devotes a chapter to each, and adds one more dealing with the human element that motivated and was itself inspired by the stages she outlines. The following is Miss Hazard's own summary of the essentials of each stage:

> *The Home Stage.* During the Home Stage in the shoe industry in Massachusetts, shoes were made only for home consumption. There was no market for them. The standard was "the best you could make or have." The farmer and his older sons made up in the winter around the kitchen hearth the year's supply of boots and shoes for the family out of leather raised and tanned on his own or his neighbor's farm. This did not, or could not happen, until the shoes worn over from England were past repair, and until in his frontier life the colonist had secured a permanent cabin and had raised some cattle whose hides might be tanned. How much the individual man, woman, and child suffered from the change to the rough homemade shoes we shall probably never know, and relatively the item of the discomfort of a pair of shoes must have been slight. One can easily imagine the wife or daughter, and even the grown son being told to stop grumbling over a poor fit, and to be thankful that he had any shoes at all.
>
> *Handicraft Stage.* The transition from the Home to the Handicraft Stage came gradually not only in each town, but even in the experience of a single shoemaker. One day he might work as an itinerant cobbler on a wage in a farmhouse, and the next, he might work in his own house, for a bargained price, on shoes for a customer, who might or might not supply the leather, but in either case, agreed in advance upon a price for the product turned out by the shoemaker. Thus the Home Stage, with its chief characteristic of production *merely for home consumption*, gave way to the Handicraft Stage with its characteristic of *work done for a market*, on the specific demand of a *definite customer*. Such work came to be called "bespoke work." Though the future owner of the shoes could no longer have oversight of the worker's use of the leather he had brought to the shop, the standard of work was probably higher in most cases.
>
> The official records of Massachusetts reveal some of the struggles and grievances of early shoemakers and master craftsmen at this time of transition. They wished to cease being itinerant cobblers at the farmer's beck and call, and to work in their own shops on leather which they provided, and at a price which they themselves set. A compromise was made by the legislators whereby the master could stay in his own shop, but he had to make up the leather that was brought by the customer who wished to provide his own, and he had to work at a "fair price." This supposedly was to be set by public opinion which shoemakers and customers alike had a chance to make.

In thickly settled communities this Handicraft Stage in its first phase came sooner and also passed out sooner, especially in the seaports around Massachusetts Bay. While we have seen it surviving in the isolated back water country even past the middle of the nineteenth century, it had passed out in Lynn, the Weymouths, and the other eastern Massachusetts towns, nearly a century earlier. In those same places, it had come also a century earlier, for as early as 1654 when Edward Johnson published his "Wonder Working Providence of Sion's Savior," he recounted shoemaking among the numerous crafts being plied in eastern New England. In his account we see an array of craftsmen doing their special work as artisans and depending upon farmers for the food, which would come directly or indirectly, as pay for their services, as early as the middle of the seventeenth century in a few of the older and more urban communities. It was not till the middle of the eighteenth century, however, that the Handicraft Stage was prevalent in the shoemaking industry in New England.

Domestic Stage. The wording of advertisements all through the years 1760 to 1810 shows us a transition period. Then there were existing side by side both the first phase of the Domestic Stage, where the entrepreneur was a capitalist shoemaker, hiring workers in their homes to make boots and shoes for him to sell at retail or wholesale, and the last phase of the Handicraft Stage of the shoe industry, where the custom makers in the village put some extra or sale work into their local store to help pay their grocery bills. This picture based on printed contemporary evidence is a true one of any community where the close of one phase of an industrial organization runs parallel with the opening of a new phase. In Massachusetts the Domestic System was well established in its first phase for the capitalist-merchant had appeared to venture, to lose, or to profit in the boot and shoe industry in some communities by 1760, in many by 1810. The impulse (1) of the sales during the Revolutionary War, (2) of the demands of trade in the United States after it, and (3) of the tariff, gave a big stimulus.

The growth of the market for boots and shoes and its assured protection did not fail to widen the ranks of capitalists and to intensify the manner of production. A new phase, outwardly marked by prosperity and volume, prevailed in Massachusetts from about 1810 to 1837. . . .

The new phase, which prevailed from about 1810 to the panic year of 1837, was characterized by specialization in processes and the rise of the central shop. The extra capital which was tempted into the boot and shoe industry brought more competition for orders, and suggested a specialization to secure rapid work which may be taken as the chief characteristic of the second phase of the Domestic Stage. The time factor seemed more vital than the quality, for with such big, insistent markets, a merchant could afford to lose a disgruntled customer occasionally, sure of having plenty of others.

Already the producer did not have to face the customer. His reputation did not suffer from occasional bad work. The standards were therefore lowered, and the competition of the employers gave entrance into the trade to less skilled and almost unskilled labor to do the cheaper work on men's brogans and women's and children's shoes for the well-developed trade in the West Indies and the South. A wide difference arose not only between the quality of custom and of domestic work, but between the wages of "real journeymen" and of shoemakers. The phase was brought to a close by the panic of 1873. . . . In 1840, a new trade with new markets was gradually emerging from the old boot and shoe trade, but it had to be coaxed. New styles, niceties, and novelties in processes required greater specialization. No manufacturer could afford to lose a single customer by slipshod work or poor stock. The competition for employment gave the employers a chance to choose only the best workman. Only those shoemakers were in demand who had developed a reputation for a specialty, like pegging, crimping, treeing, or finishing.

More workers were taken into the central shops and expected to do one thing "up to the standard," e.g., they were hired to tree boots or to finish bottoms. Not only every sole in a case must be uniformly finished, but the appearance of the shoes in all the cases sent to one customer must be the same. Competition led to new styles of long-legged boots to fit conditions of Western life, first of Australia and then of California in turn. Wholesale manufacturers attempted to capture the liking of men of Southern and Western frontiers, who had been used to custom-made shoes all their lives. It goes without saying that there were no custom bootmakers in Western frontier settlements to take individual orders. Riding horseback and walking over prairies needed peculiar styles adapted to their peculiar demands. So did digging in gold mines and climbing mountain trails. Old traditions were unsettled. The well-to-do man in Boston and Baltimore did not dream of wearing any but custom-made boots or shoes. The well-to-do man on the frontier in San Francisco or Melbourne, Australia, had come, however, by 1855, to supplying his needs at a retail shoe store with no qualm or scorn. The organization that had

been built up for supplying the southern trade with brogans was capable of enlargement; the whetted appetites of entrepreneurs were ready for more profits even with new risks. To get the shoes to distant points on time, to make them appear attractive enough to hold customers, and to keep all the work in a hundred cases of boots up to the standard of the sample, needed a new organization of manufacturing methods and processes. Specializing and labor-saving went hand in hand with standardizing. This increasing specialization led to the entrance into the shoe trade of young men and women who learned and knew just one process, and to the cessation of regular apprenticeship for shoemakers.

Not only did labor have to become more specialized and efficient in this recuperating period of the 40's, the third and final phase of the Domestic Stage, but it had to be economized to meet closer competition. That fact, added to the demand for standardization of product, led to the introduction of more machinery into the boot and shoe industry. By 1855 so general had become the use of sewing machines that shoemakers, who could afford it, had them in their homes to use on both cloth and leather. But it was left generally for the manufacturer to put the machines into his central shop, or for the man with some capital and genius for machinery, who bought or leased the "wax thread" and "dry thread" machines to set them up either in a stitching shop or in a central shop where space was hired. The more adaptable men and young women followed the machines into the shops, leaving the older people to "side up" and bind shoes by hand at home. Thus a new stage of organization came in the boot and shoe industry, bringing to an end not only the third phase but the main life of the Domestic Stage, where the "putting out" system had prevailed and the entrepreneur had worked in his central shop while the domestic workers labored in their "ten-footers." Only the "making," i.e., lasting and bottoming, of sewed shoes continued to be done by domestic workers far into the next period, until the McKay machine for sewing soles and finally the Goodyear welting machine put an end to this last surival of the Domestic System.

Factory Stage. The manufacturers, to save time and to hold the markets by prompt delivery of large orders in the 50's, completed the movement, well on its way in the 40's, of having shoemaking done under one roof under supervision in order to meet competition and the demands of standardizing. This is the chief characteristic of the Factory Stage of the boot and shoe organization; it had entered the industry gradually and almost unobserved. Large buildings, called "manufactories," and later "factories," more capital, larger supplies of stock, were the more obvious features of the growing boot and shoe trade, even in 1855. In 1860, steam-power was being introduced into the larger manufactories, making the hand labor of the domestic worker seem pitifully slow in comparison. By the time the Goodyear Welt machine was put on the market in 1875, even though people at large realized only then that the Factory System had come and the Domestic had gone, one whole phase of the Factory System had already passed. The Factory System, which had come in the late 50's, was the prevailing type of organization during the Civil War. The larger orders of shoes for the Union armies, added to the scarcity of labor, caused by the volunteering and drafting of soldiers, were additional important factors in urging the use of machinery in general, and in encouraging the trial of the McKay machine. During the war, the practicability of the McKay machine run by steam-power was demonstrated, and it was widely adopted during the late 60's. More specializing came on the part of both shoeworkers and manufacturers. Some southern Massachusetts towns made shoes only, others boots. Some towns in the western part of the state made only cheap brogans for laborers, while others made a finer grade of shoe to be distributed by New York jobbers. The increased variety of styles within this classification made it necessary to dispose of stock while it was in fashion.

The "expansion tendency" of the decade after the Civil War, led, as it did in the 30's to over speculation. Shoe manufacturers put more money into railroad stock and western lands than they could steadily hold there, so that when the hard times of 1873 came, many failures were found in the shoe trade. Thus the first phase of the Factory Stage, like the second phase of the Domestic Stage, closed with a sense of disaster and had again to be followed by a period of recuperation. The history of the boot and shoe industrial organization since 1875 makes the story of the second phase of the Factory Stage, which has been characterized chiefly by an intensive system of production, though in common parlance its chief characteristic has been the use of the Goodyear Welt machine. Competition, which has been not only acute but world-wide, has forced economies and heightened the chance of loss on the ever-increasing variety of styles which the product must take to capture the market. The insistent discovery and use of by-products, the absorption of allied industries by some shoe manufacturing firms, and the greater reliance placed by others on highly specialized allied industries, the immense increase in the size of

plants and of the number of employees, have all necessitated the perfecting of the Factory System. The rise of the "labor problem" with the closely contested struggles with organized labor has also especially characterized this period. This central phenomenon, however, together with the other factors of transportation, market organization, and finance, which have so profoundly modified industrial organization, are outside the limits of this investigation and must be left for later presentation. The beginnings of such organization of the workers on boots and shoes before 1875 will be traced in the next chapter, for the labor problem is even now, in 1920, one of the most puzzling and elemental factors in the organization of the boot and shoe industry. . . .

The year 1875 found the boot- and shoemakers of Massachusetts unorganized as laborers, but used to complex machinery, which continued to revolutionize the shoe industry both as to uniformity and amount of product. That year saw the industry safely over the "Hard Times of 1873," recuperating as usual by renewed specialization. This time specialization was in the Goodyear Welt shoes made by a machine which, with its attendant investions, have made a characteristic group in the development of a second phase of the Factory Stage, besides closing the distinctly McKay era and the adoption of the Factory System.

The development of the United Shoe Machinery Company on the side of capital, and the Boot and Shoe Workers Union on the side of labor, are the most interesting as well as the most vital characteristic facts or elements of the second phase of the Factory Stage, lasting from 1875 to our own day.

The book is a thoroughly creditable piece of work and is deserving of high praise. Yet no human product is perfection, and the author is human. She does not fully realize that a bare fact should never go unchaperoned by an explanation, although the explanation may seem obvious to those acquainted with the fact. For example, on page 7, Miss Hazard says, "During the Home Stage shoes were made only for home consumption. There was no market for them." In a book so ambitious in details we should not go uninstructed as to why no market existed. Occasionally, too, Miss Hazard's explanations where given are incomplete. On page 66, in explaining why some counties of Massachusetts developed shoe manufacture while others did not, she ascribes the reason to greater facilities of inland counties in wool-growing and consequent wool manufacture. The author did not take into account that wool manufacture needed *power* which inland streams provided whereas early shoe manufacture required no power hence could grow on the coast. Futhermore the coastal regions were advantageous to shoemakers because hides were there abundant particularly in the neighborhood of Boston to which port far-ranging commerce carriers returned with cargoes of hides in exchange for Massachusetts manufactures, sometimes shoes themselves. On the contrary the early wool mills worked on local rather than imported fleece. Perhaps Miss Hazard's publishers instead of the author herself should be blamed for the frequency of footnotes. Anything worthy of a footnote is worth including in the text itself. Some of Miss Hazard's most illuminating material is buried in the fine print at the bottom of the page. Footnotes are tedious to everyone except (seemingly) college professors. It is said that no woman can keep a discussion impersonal. It is noticeable that Miss Hazard often rises to the first person singular and in so doing renders her otherwise impersonal style well-nigh colloquial. To finish the catalogue of omissions and errors, one is astounded to discover in so careful a work the statement (page 23) that "The arrival of two shoemakers (Phillip Kertland and Edmund Bridges) from England in 1635 determined Lynn's chief industry for the future." As a matter of fact, these two immigrants were no more significant than any of the hundreds who set up their benches in nearly every colonial hamlet. Lynn's fate was actually "determined" by the immigrant Dagyr who did not settle in the town until 1750.

Everyone engaged in any of the branches of the shoe business should read this book; for its errors are surprisingly small while its information is invaluable. Every business man would profit by applying the lessons of the shoe industry to his own.

INVESTMENT ANALYSIS

By Walter Edwards Lagerquist, Professor of Finance in Northwestern University. xxi, 792 pp. The Macmillan Company

Reviewed by Robert L. Smitley *

For about ten years past students of investment have considered "Principles of Bond Investment" by Lawrence Chamberlain the basic book on the subject. In fact this book has been familiarly known as "The Wall Street Bible." The present-day criticism has been made because of the advancement of the science of investment without a revision of this book which has been so useful.

Possibly Professor Lagerquist had been reading the suggestions of H. G. Wells concerning the proposed conclave of experts for the purpose of bringing the Christian Bible up to date. In any event some wonderful inspiration stirred him to action with the result that for the first time in many years the "Bible of Wall Street" has been brought up to date in his recent excellent book entitled "Investment Analysis."

Those who have read the various books of technical or semitechnical nature on the subject of investment writhed in agony because of the dry-as-dust style. Even the intellectuals were compelled to read each paragraph slowly, carefully, and with strained concentration, to discover the principles set forth. Almost all of the writers who may have known the subject, lacked the power of exposition which makes reading of this type interesting as well as instructive. In this instance and for the first time, so far as the reviewer is able to determine, there is a delightful combination of authoritative material, the carefulness of the trained student of seminar work, the highest type of logical arrangement of text, a careful weeding out of mediocre writers and the more careful and thorough references to the best authorities, and a brilliant expositional style which makes this book easy to read and easy to understand. Possibly the superlativeness of the commendation suggests personal interest and possibly the stimulus of first seeing such a remarkable piece of constructive work creates too great enthusiasm, but even if these are so, whatever faults in the book may be discovered, the prediction is that they will be so insignificant as to detract in no serious manner from its usefulness.

The book is divided into four parts with several appendices. The first part deals with general fundamentals and their application to the analysis of investment securities. In this part there are thirteen chapters dealing with such factors as the meaning of investments, the analysis of the corporation report, the negotiation and issuance of the obligation, the supervision of the banking and investment banking influences, the problem of interest return and the market influences affecting prices, and finally the regulation of the issuance and the problems of taxation.

The author deals with this subject in a new manner. He combines the theory of the scholastic economist with the practical application of the dealer. Up to the present time we have not had an expert on this subject who tempered the economic theory with practical application. The cyclic theory of Professor Wesley Mitchell is emphasized but only in connection with the methods of practicality used by the hard-headed investment banker. For example, the author appreciates the vital problems of the taxation side of the subject. One of the most involved and least solved is that relating to inheritance tax. The following paragraph is typical of the clarity of his reasoning:

> While the inheritance tax is not a direct tax upon securities, the investor who is purchasing, primarily, for his legacy must give it careful

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thought. This particularly applies to the exemptions allowed by the different states and becomes increasingly true as the holdings grow in amount. As the larger legacies have been confined to a narrow group of cities in the New England and Middle Atlantic states, and the statistics are relatively new, no very wide popular interest has been taken in this problem. But with the increasing number of fortunes, especially those of moderate size, and the increasing interest in taxes, attention is being directed to the effect of these taxes upon securities. What the direct effect upon security values is, it will be difficult if not impossible ever to measure accurately.

The second part of the book describes each kind of corporate bonds—railroad bonds, railroad equipment securities, street railways and interurban traction company bonds, electric light and power bonds, gas company bonds, hydroelectric power bonds, private water company bonds, telephone and telegraph bonds, Great Lakes steamship bonds, industrial bonds, and timber bonds. It is not necessary to make comment on these chapters other than to state that the author has carefully read and digested every known writer on these various subject heads. He has boiled down the voluminous material so that the reader will get the fundamentals. He has used Kimber Maps and case illustrations and everywhere the reader is referred to authority. Especially valuable at the present time are the up-to-date chapters on railroad bonds. Nothing is minced in the way of adverse criticism for past wrong methods and many valuable suggestions are offered.

The third part is devoted to bonds secured by land or real estate—real estate mortgages, real estate bonds, farm mortgage and Federal Farm Loan bonds, irrigation securities and Drainage and Levee bonds. While the investing public—habitat Wall Street—knows little about this form of investment from the individualistic viewpoint, it is about time that a better realization was gained. If we run down the definition of investment we will find that it is more predicated on security backed by real estate than by any other form of wealth. No other treatise has attempted to make this point so prominent. The total cost of the book would be reciprocated to the purchaser through reading these five chapters.

The fourth part of the book deals with Civil obligations. This includes a very excellent chapter on Foreign Government bonds. The integrity of the issuer and the possibility and consequences of repudiation of the debt are clearly set forth so that in this case even "he who runs may read" and understand. The problem of municipal obligations and their relation to bonds which suffer taxation is one which will have an immense bearing on the business of investment banking in the future. As the problem is recent, this is the only place where the student may gain an insight into the situation.

In the first appendix, Professor Lagerquist has fully catalogued and described each kind of bond. Mercy on us! There are 175 different kinds. The next time that the suave and kind-faced bond salesman visits your sanctum, ask him to tell you the 175 diffeient kinds of bonds listed by Professor Lagerquist. There is certainly much more than "first mortgage" to be considered. And the definitions can really be understood and differentiated.

In another part of the appendix we find that which gives the research student the greatest joy on earth. It is a wonderful bibliography covering 72 pages and classified. Then the professor offers a "knock-out blow" by stating that it "is not intended to be exhaustive, although an attempt has been made to make it representative." What must that man have waded through to find out what he has told us? But for the purpose of pleasing the accountants and statisticians who read this review, we have counted the references. Investments (general) 42 suggestions: Accounts for Investments and Stock Brokers' Accounts, 8 suggestions: Bonds, 22 suggestions: Building and Loan Associations, 3 suggestions: Capital and Capital Stock, 10 suggestions: Capitalization, 21 suggestions: Crises and Panics, 28 suggestions—and as we have only reached the letter "C" one can easily appreciate the implied sarcasm of the author in stating "it is not intended to be exhaustive." In fact there are about 900 references and Professor Lagerquist's only competitor in

research appears to be Henry Thomas Buckle in his "History of Civilization in England."

In all there are about 800 pages of vital and interesting material. The book will be without question the established authority on Investments for students of investment firms, of universities, and for all who are so fortunate as to have large sums of money to invest. Its use as a base with Dr. Sakolski's excellent text, "The Elements of Bond Investment," and the popular book of Professor Jordan entitled "Investments," rounds out an excellent course on the whole subject.

There are no doubt a number of errors in the book. If there were not Professor Lagerquist would be beyond association with other human beings. So far we have not found them but we have only read the book for the first time. However, that these errors may be minimized, the author enlisted the co-operation of the greatest living authorities on the subject who carefully read the manuscript before publication. It is also interesting to note that E. W. Bulkley, who has done so much for the purpose of educating the general public and putting the profession of Investment Banking on a higher ethical plane, has been the inspiration behind the author in his effort.

WHEN YOU WRITE A LETTER

By Thomas Arkle Clark, Dean of Men and Professor of Rhetoric, University of Illinois. 165 pp. Benjamin H. Sanborn and Company

Reviewed by John M. Clapp*

Writing the letters of business is an activity in which utility governs, alike as to form and content. But business letters of even the most practical type must retain some of the quality of the personal letter out of which they grew. Even the masses of routine letters made possible by swift communication, typewriters, and carbon paper, depend to a considerable degree on their power of conveying the impression of one person speaking directly to another. And every business man now and then has to write a letter in which the personal touch is everything.

"When You Write a Letter," by Dean Thomas Arkle Clark of the University of Illinois, is not primarily a business book but it is one from which the business man can obtain real help.

Most books on letter-writing are written by eager young men who have to teach the rudiments to college classes or to the junior members of a correspondence department. Beyond indispensable but elementary matters of "clearness, conciseness, coherence, and courtesy," they have not much to say. This little volume by Dean Clark is not a textbook, it merely tells in a very personal way some of the things he has "learned through thirty years of experience and observation in writing social and friendly and business letters to all sorts of men."

The best feature of it is neither rules, models, nor detailed analysis—though all these are there—but its tone. The dedication, "To my former students and all others who have not answered my letters," exemplifies the mental attitude out of which good letters come—not only real interest in other people and their affairs, but, what we do not always remember, the patience and unfailing humor that give lightness of touch.

Dean Clark treats his readers, moreover, as he would have them treat their correspondents. Few of us, in school or out, really enjoy being "lectured at." This book does not "lecture." While its purpose, obviously, is to induce people to give a thought to letter-writing it does not urge upon them any magic formula, or promise any swift improvement. Yet, I imagine

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there is scarcely anyone but will find in the counsel so genially and casually imparted much that will clarify his own view of the problem of conveying ideas to others, and will true his taste as to methods.

The book comprises six essays as follows: Letter-Writing; Materials and Form; The Friendly Letter; Formal Notes; The Business Letter; Letters of Courtesy.

Here are a few of the remarks on the business letter:

We should use the same forms of correct speech and the same sentence structure in doing business whether orally or in writing as we do in making love or in writing an essay or in giving an after-dinner speech, excepting that our approach and our rhetorical style should perhaps sometimes be different. . . .

"Would like catalog of your school," a business man writes me. "Have son who is now in high school and will graduate in spring. Want him to take engineering course. Would like to know cost and possibility of finding good lodging place for him, Yours—"

His communication resembles a night letter, kept punctiliously within the conventional fifty words as if he were making a strenuous effort to economize time and to reduce expense, rather than a business letter from an intelligent man who has something to say.

Abbreviations are most frequently an indication of carelessness, or haste, or laziness. They have about the same effect upon the appearance of an otherwise good-looking business letter as a man who goes to a party and who wears no coat. The writer gets on more quickly, but the effect of their use is seldom a pleasing one.

A letter of recommendation should tell the truth. . . . When we recommend men we are talking about human beings who, as nearly perfect as they may be, must still have some qualities which might be improved upon. One gives the strongest impression of sincerity when one mentions the weaknesses as well as the strong points of a person about whom he is writing. . . . It ought to be possible to say something individual about any man, for no two of us are alike. "Mr. George Ward came to me directly from college and has been my secretary for three years," wrote a friend of mine. "He is not so diplomatic at all times as I should wish, but he is dependable, he is loyal, he is intelligent, and he likes to work. I have never given him any piece of work to do, no matter how difficult, that he did not do well. It will give me no discomfort if he is willing to stay with me." It was a good picture of an efficient man.

There is another type of business letter which is so difficult to write courteously and in good temper that it usually proves too much for the inexperienced; that is the letter calling attention to an error and asking that it be corrected. . . . One of the first things to keep in mind when a mistake has been made is that there is no likelihood of its having been intentionally made. Every one who makes mistakes soon learns that he pays a heavy price usually for his error, so that he would rather be right than not. Any right-minded business man is willing at once to make his mistakes good, and usually all that is necessary is to put the fact before him pleasantly, and he will do the rest. Unless we have never, ourselves, made mistakes we should not fly into a rage when other people do so.

One thing which the reader will note is the prominence which Dean Clark gives to "The Letter of Courtesy."

When I was a young fellow, just starting out into life, I came into daily contact with a man who had had a considerable experience with all sorts of people as a professional and as a politician. He was shrewd, business-like, and, by those who did not know him very well, was considered cold and calculating—a man who would not be likely to do anything for a purely emotional reason; and yet from him I learned the effectiveness and influence of the letter of courtesy. I mean by this phrase the letter written not in reply to another letter nor yet to elicit a reply of any sort, but simply as an act of politeness and thoughtfulness to acknowledge a kindness or an obligation or to let one's friends or acquaintances know that one was aware of their sorrows and their successes, of their comings and goings, and that one had a real personal interest in these. It is the sort of letter that one is seldom under obligations to write, but if it is written at all it must be done at the opportune moment. . . .

The effect of such letters upon those who receive them is not their only effect. Indirectly they influence the happiness and the success of the writer. First of all they bring him more friends, and help him to hold those he already has. "If one would have friends, he must show himself friendly," is the substance of Bacon's statement, and its truth can be proved in the experience of all of us. Few of us have more friends than we need, and we can well afford to hold on to our present list and to develop as many new ones as possible. It takes a very little thing sometimes either to cement or to break a friendship that has no very strong bonds.

The higher executive whose secretaries have relieved him of the drudgery of routine letter-writing will be interested in the

unqualified recommendation of longhand for the letters for which he is still responsible. As shepherd of some thousands of young men, Dean Clark has himself an endless burden of letter-writing, most of which he has to handle by dictation. He is strong for longhand, though, for letters of importance.

Stenography has done a great deal to facilitate and accelerate letter-writing, but in many ways it has injured and cheapened the art. Very few men dictate as they talk. . . . Some men can give a personal human touch to a dictated letter, but the number is limited. Dictated letters are infrequently planned with much care, and such a letter usually contains more words and says less than a letter written by hand. The limitations of time in writing a letter in longhand give opportunity for thought and discrimination in the choice of words and induce brevity and directness of expression. One has not time to say as much when writing longhand as when dictating, and so chooses his phrases and his ideas more carefully, plans his ideas more thoughtfully, and says more effectively what he has to say.

There are few men who would not benefit personally by reading this little book. There are probably fewer who would not like to see it in the hands of some subordinate whose zeal is not yet tempered by long carrying of responsibilities. There is scarcely anyone, I fancy, but would be glad if some good genius could bestow it upon some of his own friends who "do not answer his letters."

BANKING PRACTICE

By L. H. Langston of the National City Bank of New York and N. R. Whitney, Professor of Finance, College of Engineering and Commerce, University of Cincinnati. xvii, 395 pp. The Ronald Press Company

Reviewed by James D. Magee *

Many books disappoint the reader by not living up to the promise of their titles. So it is refreshing to find a book which gives more than its modest title might indicate. Banking Practice usually suggests a rather technical description, with much dry detail, of the mechanics of banking. In this book there is more. The authors have taken the functional approach and are quite as much interested in explaining why the things are done as how they are done.

The book is based on "Practical Bank Operation" by L. H. Langston, published by the Ronald Press Company, and reviewed in *Administration* for July, 1921. The sub-title is "A Textbook for Colleges and Schools of Business Administration." Thus the authors have taken the bigger book, whose appeal is chiefly to bank executives, and worked over the contents and made additions with the needs of the future business man in mind. This means, of course, that the book will also interest present business men and help make clear some of the puzzling things about banking.

Usually the chapters begin with a general consideration of the matter under discussion and then take up the more technical descriptive material. Often some history is interwoven to explain the present situation. A considerable number of the more important banking forms have been reproduced.

The book starts with a description of the method of organizing a bank. The advantages and disadvantages of the private, state, and national forms of organization are presented. The steps taken in organizing a bank are indicated in some detail. The following paragraph will give an idea of the style and point of view of the authors:

Need for Government Regulation.—Bankers occupy a position of great trust. Millions of people throughout the country entrust a large portion of their wealth to the care and custody of banks. The very word "bank," connotes security in the minds of many people, and there-

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fore almost any group of persons who may open an office which they call a bank will, through the confidence aroused by the name, attract deposits from people seeking a place of security for surplus funds. It is essential, therefore, that public confidence in institutions called banks be preserved so that people will be encouraged to deposit their savings in places where the money will be used wisely, thus counteracting the tendency to hoard money which will be exposed to the hazards of theft, fire, and foolish speculation. Hence, not only as a matter of justice but also as a wise social policy, banks should be subject to such control as will protect the savings entrusted to their care. A bank failure exercises a restraining and blighting influence on the economic life of a community for years after its occurrence. Unfortunately persons who occupy positions of trust are not always absolutely honest and uniformly wise. To the customers of a bank that has failed, honest mistakes are just as costly as purposeful dishonesty. The chief reason, then, for state and federal regulation of the banking business is to insure its honest and reasonably efficient conduct.

Bank management is taken up from two points of view: managerial machinery or personnel, and the problems of the manager. The qualifications of directors are discussed and the regulations of the Clayton Act and amendments set forth. The reason for the law is thus indicated:

Interlocking Directorates.—Formerly it was legal for wealthy and powerful financiers to serve on the boards of a number of banks. From the standpoint alike of the bank and the public this custom had some advantages and disadvantages. The chief advantage was that each of such banks had the benefit of the judgment, experience, and wide observation of men who were closely in touch with business affairs on a large scale. The chief disadvantage was the danger that men in a position to influence the actions of a number of important financial institutions might use their power for their own advantage and to the detriment of others. As a result of the widespread agitation against trusts and similar large business combinations, legislation has been enacted which seeks to prevent the danger of domination of a large number of banks by a few individuals.

The duties of the various officers are outlined. The problems which face the bank management are discussed under eight heads:

1. Obtaining new business.
2. The analysis of accounts to determine which accounts are desirable and which are undesirable.
3. The procurement of statistical information required for the efficient conduct of the business.
4. The management of the personnel of the bank.
5. Provision for the education and training of men for banking.
6. Procurement of legal information.
7. The study of methods by which the bank may serve its customers.
8. Checking up and handling in an economical manner the supplies used in a bank.

Business men will be particularly interested in the analysis of the cost of handling a depositor's account.

Since the authors have taken the functional point of view, it is important to see what, in the broadest terms, they conceive to be the functions of banks. They list them under the title:

A Bank's Services to Society.—The services which a bank sells in its effort to make a profit may be grouped under four main heads:

1. Providing facilities for the safe-keeping of money and valuables.
2. Providing machinery for exchange.
3. Making loans and manufacturing credit.
4. Serving in a fiduciary capacity.

In connection with the manufacturing of credit, federal reserve notes are described. The statement of the security back of them is that of the law as first enacted. The amendment permitting federal reserve banks to get notes by depositing gold with the federal reserve agent and counting that gold as part of the 40 per cent reserves, has evidently escaped the attention of the authors.

The general statement of the records needed by a bank is admirable:

The Accounting Operations of a Bank.—In carrying on the operations which center in these four main lines of service which the bank sells, certain records must of necessity be kept. The essential purpose of the records or accounting of a bank is to furnish information concerning the relations that exist at any time between the bank and its customers. Since the bank is debtor to many individuals and creditor to many others, it is necessary that ledger accounts be kept to indicate the status of each individual and his

relationship with the bank at a given time. Another type of information required by the bank managers is that which is in the nature of an inventory. The bank has many things of value belonging to itself and others. These consist of cash, stocks, bonds, real estate, warehouse receipts, and various other forms of property. Records showing the property on hand and indicating the ownership must likewise be kept. Furthermore, the bank is engaged in business—it seeks to make a profit. It is therefore in receipt of an income and is constantly incurring expenses for operation. For the benefit of its shareholders information is needed as to the progress which the bank has made from one period to another. Records such as balance sheets must therefore be prepared to furnish information as to the status of the institution at various times.

After this preliminary matter, the general description of the operations of the bank begins with receipts over the counter. Here the duties of the receiving teller are outlined. The various defects in checks are pointed out. A clear description of certificates of deposits is given. A chart is presented showing the manner in which the bank disposes of the various items received. The work of the mail teller is given the same sort of treatment. Next the work of the paying teller is taken up, indicating its part in the service of the bank and describing the records kept.

Under the head of "Exchange" is given a rather comprehensive account of the New York Clearing House, of the transit system between correspondent banks, and of the par check collection system of the federal reserve banks. An incidental feature is the explanation of and justification of exchange charges. The routine of handling collections is set forth.

The treatment of foreign exchange is particularly good. About 80 pages are devoted to the subject taking up; rates, types of bills, documents, futures, arbitrage, foreign collections, commercial letters of credit, export credits, travelers' letters of credit, and travelers' checks. Specimens of the more important documents are given, and illustrations of the way in which they are used. This should appeal to those business men who are interested in developing foreign trade.

The subject of credit is handled by discussing the nature of credit, the sources of credit information, the method of assembling and analyzing the credit information, and the matter of granting credit information to others. Each item of the "Borrower's Statement" is examined. The business man can easily see how to use this to make his credit statements more effective.

The following statement about credit is sound reasoning and worth emphasizing:

Responsibility of Bankers for the Use of Credit. —Since credit enters to such an important extent into industrial and commercial activities, it can readily be seen that its use must be guarded with great care. As bankers are the chief custodians and dispensers of credit, the responsibility for its proper use rests upon them. If, in their desire to increase profits, they extend credit too liberally, they foster an inflation of the medium of exchange which will have disastrous effects. If they grant credit to those who, because of lack of ability or integrity are not entitled to it, not only are those persons who could make wise use of it hampered in their productive activities, but the borrowers are likely to fail to meet their agreement to repay their loans and thus cause large losses to the bank and to the community. This failure will not only bring suffering and hardship upon individuals who may lose their savings through faulty judgment on the part of the banker, but it may result, if these failures become numerous, in the precipitation of a commercial and industrial panic or depression, with all the accompanying ill effects.

Bankers are entrusted with the funds of large numbers of people, because they are presumed to be honest and skilful in the handling of financial affairs, and because it is assumed that they have the facilities for ascertaining the capability and reliability of those who wish to use credit. As specialists in credit, upon them devolves the responsibility of safeguarding and directing its use, so that it may come into the hands of those who will employ it most effectively.

Loans and discounts are the subject of two chapters. The circumstances which give rise to the various forms of borrowing are indicated. Especial attention is given to call loans. After a short chapter on security investments, three chapters are given to the account of the bookkeeping, the audits, and the examinations of banks. Finally there is treatment of fiduciary relations, the bank as representative of the customer, and the bank as adviser.

The usefulness of the book is enhanced by a 15-page index. The authors deserve credit for the way they have put vitality into a book on banking practice Their functional approach is no mere pose, it is really carried out.

AMERICAN FOREIGN TRADE

By William F. Notz and Richard S. Harvey. xv, 521 pp. Bobbs-Merrill Company

Reviewed by H. Parker Willis*

"American Foreign Trade" is a volume intended to meet a composite type of demand. The authors suggest in their introductory remarks that it may be of service both as a textbook and as a business handbook. It is always difficult to prepare a work which shall meet the needs of readers whose requirements are so diverse as is thus suggested. Nevertheless this volume contains a good deal that will be of service in teaching courses which deal with foreign trade, while the fact that it contains so much actual documentary matter ought to make it a very serviceable handbook to those who are engaged in overseas business, especially as there is today no other available work of the kind.

While success has been attained in rather unusual degree in thus popularizing American foreign trade and in rendering it available to different classes of readers, the very fact that it is intended for a composite group necessarily results in some defects in the treatment. One of these is found in the fact that it has been deemed necessary to introduce a good deal of historical matter whose present usefulness is rather questionable from the standpoint of the business man. No doubt it was included in the thought that the student might find it useful. A good deal of it, however, can easily be obtained elsewhere and the only good ground for presenting it again is that a complete treatment within the covers of a single volume is desirable. The part of this section of the volume that needs comment at this point is found in the treatment accorded to the Trade Commission Law and the Clayton Act. These are recent developments in the Anti-Trust discussion which have not been so fully dealt with in serious books as have the earlier phases of the subject. The fact that the authors of "American Foreign Trade" seem to approve both these laws is astonishing—particularly so with reference to the Clayton Act whose application in a variety of fields has thus far been productive of disturbance without any compensating advantage which can be definitely ascertained. The serious student who is free of prejudices will hardly agree with the opinion of Messrs. Notz and Harvey that the Anti-Trust laws constitute a good point of departure for later legislation. There is a good deal of reason for thinking that before we get very far with our present commercial development we shall have to break sharply with the earlier anti-trust traditions; indeed, there is not a little in recent development to suggest that such a breach has already become well marked.

Much more useful and applicable to present conditions is the discussion of the Webb-Pomerene Act which is furnished in Parts III and IV. Part III is introductory to the discussion of the Webb-Pomerene Law, while Part IV is interpretative and analytical. The discussion of the Edge Act and of financing under it, which is found in Part V, is also full of facts and careful descriptive matter. The last section of the volume gives a broad view of recent tendencies in foreign trade and of the development of international movements.

What one chiefly gets from "American Foreign Trade" in the way of general notions is recognition of the difficulties which we have thrown in our own way in connection with the development of our overseas commerce, and the recognition that there is al-

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ready at hand an extensive and complex machinery which has been provided to overcome in some measure the consequences of past misjudgment. The question whether the use of this machinery will really render possible a sound and effective growth of foreign trade is one which is not answered, and, of course, could only be tentatively answered in this volume. It is clear to the reader, however, that success in foreign trade at the present time involves a knowledge of many complex legal, financial, and commercial matters, and that it is a subject which calls for very expert handling. Technically the information derived by the general reader from the volume will be a knowledge of many matters which have heretofore been hidden under masses of administrative rulings and decisions of various kinds. A study of the book, therefore, should be decidedly broadening to the business man who is either engaged in or, contemplates an entry into, foreign commerce, while it should save him many a doubt as to whether policies or measures which he has in mind are legal. It should also suggest to him a variety of methods by which he may economize and render his organization more efficient.

At the present moment we are passing through a period of extreme depression in our foreign trade. This is not so much the result of decline of actual volume of commodities as a change in their kind and especially a change in the enthusiasm and interest with which the subject is regarded. Heavy losses incurred by foreign traders and by our banks have caused great mortality among business houses engaged in this branch of operations, and some are pessimistic enough to assert a continued tendency on the part of the United States to withdraw from an active share in international business. There is little to warrant any such hopeless view. As reconstruction progresses we shall resume our position in international trade, partly because such action is demanded by our own interests and partly because the absolute needs of other countries will make it necessary that we should do so. The value of this volume will make itself more and more apparent as our re-entry into foreign business becomes more and more evident. No doubt the book will have to be continually brought up to date and revised in order to make it available as a business man's guide. This should add to its value and should give opportunity for the elimination of all surplus or unnecessary material.

ADVANCED BUSINESS CORRESPONDENCE

By George Burton Hotchkiss, Head of the Department of Advertising and Marketing, New York University, and Edward Jones Kilduff, Professor of Business English, New York University. x, 513 pp. Harper and Brothers

Reviewed by T. H. Bailey Whipple *

I can truthfully say that this is a really worthwhile book and its contents and their masterful treatment justify its title. No better and more deserving word could be said of it than that it meets a great need—that has been too feebly recognized, but which now, as never before, is being realized.

Its key thought is that every letter should be a selling letter. This theme is expanded in an easy, appealing, and constructive manner. It reviews through almost indiscernible methods and by the taskless interweaving of the principles of economics, the principles of language construction. It is more than a study of language: It is a disguised study of Business and Business Psychology. It discusses every classification of letters and reports, their essentials and construction, and it is unique in that it treats practically and effectively of the new and difficult processes of Correspondence Supervision. Its remarkable value as a most

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helpful instrumentality will make a strong appeal to both the inexperienced and the experienced correspondent and to the officials who bear the responsibility and who find it so extremely difficult to voice, through subordinates, the effective message.

One or two quotations must suffice to show the style and mode of treatment of the authors. In their opinion:

> A good principle to follow, whenever possible, in writing the sales letter is this: *Put your service among the services in which the reader is already interested.*

The service element in other letters is emphasized as follows:

> The average business man is rarely, if ever, called upon to write a sales letter—at any rate, one that is avowedly a sales letter. In the large office, this work is left to specialists. In the small office the bulk of correspondence is usually of other kinds. In some institutions sales letters are not used at all.
>
> The principles that have just been outlined, however, are of value to every letter writer. For every letter is in a sense a sales letter. It may not be attempting to sell a specific article or service, but in every case it does have to "sell" the good name of the house it represents. Like the personal representative, it always builds up or tears down good-will.
>
> Every experienced salesman knows the truth of this. He can cite instances of tactless letters from the credit department of his company that have driven away customers or aroused in them such ill-feeling that he had to work twice as hard to secure orders. He can tell of orders and inquiries that were so indifferently disposed of that the customer lost patience. He can tell of complaints that were answered so tartly that the grievance was aggravated. It would be excellent training for any letter writer to go on the road for a time and see the havoc wrought by ill-will building letters. Failing this, he might try his hand at writing actual sales letters. Either experience would soon make him realize that every letter has untold possibilities for helping or harming the writer and his company.

This quotation from the book shows rather than tells what to do:

> Routine writing also leads to the development of a routine personality. That is one reason why the use of hackneyed correspondence phrases is to be avoided even in the every day business letter. The habit grows, and the writer soon finds himself incapable of writing important messages without depending on them. He not only fails to develop his individual abilities, but often loses whatever individuality he had and dooms himself to a subordinate clerical position. If this seems an over-statement, compare the letters of a real executive with those of a clerk.
>
> Here is a paragraph written by the vice-president of a bank:
>
> > Monday was a bank holiday here, and I did not get your note of the 9th until yesterday. Naturally I felt like throwing up my hands to think it was necessary for you to write me again although I want you to do so whenever anything goes wrong.
>
> This is natural, fresh, personal. It has character. Suppose he had written as follows:
>
> > In view of the fact that Monday was a bank holiday, your esteemed favor of the 9th instant did not come to my attention until yesterday. It is a matter of deep regret to us that you deemed it necessary to communicate with us again regarding this matter, although it is our desire to have you do this whenever difficulties arise in the course of our transactions with you.
>
> The supposition is clearly absurd—not because such letters are not written, but because the men who write them rarely climb to positions of great responsibility.

A point too often overlooked in business correspondence is the following:

> The writer must also consider the character, environment, and interests of his reader. He must not make the mistake of assuming that every reader is a business man like himself, with an office and a flat-top desk, and his mail delivered to him in a wire basket every morning. Business letters are not written entirely by business men. Still less are they always to business men. The reader may be a doctor who glances over his mail at the breakfast table. He may be a farmer whose mail receives leisurely attention after his chores are done. He may be a garage keeper who gives attention to his letters at his irregular convenience. *He* may even be a society woman or a busy housewife. The same letter will not do for all readers, even though they may all have the buyer's attitude toward the transaction. As we shall see later, the collection letter will not handle the old customer and the new customer in the same way.

The style of the authors is especially to be commended: It is human, it is unmistakably understandable, unique in its simplicity, originality, vitality, and practicality. It is persuasion and to quote from the book, "Persuasion Commercialized is Salesmanship."

A mastery of this book is the answer to the business executive's cry—"Give us men who can write good letters."

ACCOUNTANTS' REPORTS

By William H. Bell, M. C. S., C. P. A., Member of the firm of Haskins and Sells. 247 pp. The Ronald Press Company

REVIEWED BY ARTHUR ANDERSEN *

To gauge this book properly, it is necessary to consider the author's intention, which he expresses in the following words:

> Although existing works on accounting and auditing contain much discussion relating to the theory and practice involved in financial statements, very little has been written on the preparation of accountants' reports from the standpoint of uniform practice with respect to form, arrangement, and terminology, as well as of content. It is with a desire to assist in improving the existing practice that this treatise has been written.

In his nine chapters Mr. Bell takes up in order, balance sheets, income and profit statements, consolidated statements, miscellaneous statements, certificates, presentations and mechanical features of the report. The book is based on many years of professional practice by the author, and presents what he considers to be the best practice of professional accountants in the preparation of reports. Numerous specimen statements are given which are designed to illustrate forms in common usage. The volume is addressed not only to public accountants, but to private accountants and students of accounting as well, since, as the writer points out, there is no essential difference between public and private practice in the preparation of accounting statements.

The author has recognized the controversial and moot aspects of the subject and has avoided dogmatic assertions; indeed some readers may be annoyed by his reluctance to commit himself to definite assertions in some cases. In this connection, however, the reader should bear in mind that there are differences of opinion among high accounting authorities on questions relating to the preparation of reports. Necessarily, therefore, a work of this kind which represents the author's opinion rather than a compilation of standard procedure based on common usage, must be subject to a certain amount of qualification.

The material is clearly presented and academic discussions are avoided. To accountants of several years' experience the book will be valuable as a check on their ideas of correct practice in the preparation of reports. Professional accountants are by no means free from the influence of precedent and custom. A careful examination of their reports and comparison with the methods followed by others may disclose illogical procedure which has nothing but precedent to commend it. Junior and private accountants will find this treatise an excellent handbook to refer to when perplexing problems of presentation arise. The practical value of the book is enhanced by the fact that the pages are not printed, but are facsimilies of typewritten pages so the reader can see exactly how the report should look. The student of accounting will appreciate the practical way in which the various points are discussed. Many questions which are ignored in works of a more theoretical or academic nature, but which arise often in actual practice, are answered. The chapter on consolidated statements is particularly good as a practical aid in the preparation of such statements.

A chapter of 38 pages has been devoted to the comments or text of the report. The discussion is given under the following heads: General Remarks, Order and Arrangement, Importance of Language and Style, Use of Captions, and Comments on Balance Sheet Items. The discussion is followed by specimen complete and condensed comments. The author confines his treatment to the more or less routine comments relating to the verification of accounts. It is rather disappointing that

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so little is said with respect to comments covering an analysis of the factors contributing to the financial and operating conditions which may be disclosed by the various financial and statistical statements.

The book is a worthy addition to the literature on accountancy. Mr. Bell is to be commended for undertaking this work on a phase of accounting work of growing importance. It is hoped that the appearance of the book will be of unusual significance by reason of the impetus which it may give to a movement toward greater uniformity of practice among professional and private accountants.

ADVERTISING THE TECHNICAL PRODUCT

By Clifford Alexander Sloan, Vice-President, Campbell-Ewald Company, and Advertising Manager, Hyatt Roller Bearing Company, and James David Mooney, Vice-President's staff, General Motors Company, and Special Lecturer, New York University. x, 365 pp. The McGraw-Hill Book Company

Reviewed by Frank Thayer*

Advertising ammunition for the marketing of technical products is the message of this book to the man who pays the advertising bills, as well as to the man who writes the technical copy. Toppling over some of the pet ideas of present-day advertising practice the authors show that the revolutionary increase in the use of technical merchandise and machinery during the last few year and the accompanying development of large organizations engaged in the manufacture and distribution of such products have created big problems of economic distribution.

Too much money has been spent on literary advertisements of technical materials and equipment. The writers have seen the mistake and have pointed the way to better advertising display and more judicious exercising of the advertising budget. Already some agencies in their work for manufacturers have seen the light and have built better copy based on well-defined ideas of what that copy is supposed to do.

General publicity is doomed, according to the authors, for they say:

> There is no question but that advertising must be made more productive of direct results. Quickly the day is coming when the alibi of "General Publicity," when offered to the man who pays the bills, is going to be as a red flag waved before a bull. And direct results cannot be shown by a copy writer whose sole inspiration is pep and punch, and whose every effort is marked by the one desire to make copy "snappy."

This unfortunate condition can be laid, however, more at the door of the manufacturer than at that of the advertising man or advertising agency.

> For what has been said as regards the manufacturer's permitting an advertising manager or agency to write copy based upon knowledge of the product gained from a review of a catalogue or a walk through the plant, applies to the composition of the copy. Many a manufacturer permits himself to be sold on copy that if read aloud to one of his prospects by one of his salesmen would result in the immediate dismissal of that representative. When the manufacturer will come to regard his advertising department in the same light as his production department, and will regard his advertising appropriations as an investment rather than as an expense, the day of the "pep" and "punch" and "snappy" copy writer will be a day that is gone.

The fallacy that copy writing alone is the bulwark of advertising is clearly shown. A thorough knowledge of advertising psychology and economics is equally necessary. In outlining their book the authors have distinguished between the standard technical product and the specialty technical

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product. They point out that the first step to be taken in working out a marketing plan is to analyze very thoroughly the product, and then "decide who must be reached and influenced in order to sell the product." There is the case of a manufacturer who wishes to sell a machine tool, and again there is the case of the manufacturer who makes a bearing or an axle that goes into another manufacturer's plant in turn to be marketed again, as in the case of the household motor appliances or the motor truck.

There are excellent discussions of the economic problem, the product, the market for the product, advertising the product to the market, the advertising appropriation, and the campaign. Need of careful investigation is emphasized; it is noted that the sampling method offers a fair degree of accuracy with a sensible outlay of time and expense.

It is shown that the advertising appropriation is based on the following factors:

1. In the Case of Limited Capital
    1. Capital available for selling and advertising.
    2. Capital available for advertising.
    3. Low cost of some direct forms of advertising make them immediately available.

II. In the Case of Unlimited Capital
    1. The product.
    2. The sales volume to be achieved.
    3. The percentage of sales volume that can safely be allowed for sales and advertising expenses.
    4. The relation between sales effort and advertising effort needed to achieve the volume.
    5. Plant output.
    6. The capacity for expansion.
    7. Total consumption of the product in the case of a standardized product, like transmission belting.
    8. Total prospective consumption of the product, in the case of a specialty, like roller bearings for looms.
    9. Psychological factors in the market.
    10. The time the advertiser wishes to take to achieve his objective.
    11. The geographical distribution of the prospects for the product.
    12. The distribution by industries of the prospects for the product.
    13. Competitors' sales volumes.
    14. Competitors' advertising.

Equally careful analysis is made in considering the product, the market, and the campaign.

Thus it is shown that more and more attention must be paid to the true psychological and economic laws underlying advertising, rather than giving so much attention to the turning out of snappy paragraphs.

Emphasis is laid on the new way in which advertising should be considered. Technical publicity should be well planned, for the day when a general publicity story will do for all kinds of technical publications and trade journals has gone. If, on the other hand, the manufacturer will have the advertising staff prepare a special contribution for a trade journal, more than likely that trade journal will be glad to make a feature of the article. Too many manufacturers have neglected the opportunity to have their engineers prepare papers for engineering society meetings, an idea that usually nets valuable results. Because of the personal influence in the selection of technical products, some manufacturers ought to see that technical exhibits of their products are made in the best schools of engineering. An out and out gift to a high-grade school makes friends and many times lays open the way for the purchase of such products when these young engineers are in positions of authority.

When placing advertising with the so-called trade papers, it should be remembered that there are two distinct groups of purchasers: (1) The concern that purchases for use in its own plant; (2) the concern that purchases to sell to users. One advertisement appeals to the use and the saving effected through the use of the specific tool or equipment; the other appeals to the possibilities of sale to users of the tool or equipment. In reaching these different groups the authors show that the development of advertising should meet squarely the exact group through the choice of the right medium.

The advertisement should appeal to well-defined groups, the manager, the engineer, or the delaer through whom the product is distributed; this correct placing of the appeal can be aided by the right

selection of media, thus harmonizing the advertising appeal with the editorial appeal.

In this editorial motive is to be found a copy appeal for a certain group of papers, and advertising copy instead of being purely descriptive of the product can best be written for that paper by getting into it the same motive that guides the editor in his selection. An industrial crane advertisement, for example, may be written to show the technical features of the crane, or the general advantages of that piece of equipment, and it may command the attention of the reader of the technical journal. But if that journal has a management appeal, the copy will sing the same story as the editorial pages, if the copy writer, instead of talking about cranes, will talk about reducing the cost of handling material in a plant, and arrest at once the attention of the manager who is face to face with just that problem.

Similarly the proper appeal should be made to the engineer, who is interested in the technical working of the machine or equipment; to the dealer who is interested in the possible financial return in turning over his stock of machine equipment.

It is pointed out that few have recognized the importance of the editor of the technical journal in moulding opinion regarding the trade conditions and the industry. Congratulations are due the technical paper editors, especially so when advertising men, such as the authors, recognize the importance of the trade or technical paper editor in industry. The application clearly is that the better confidence the industry has in the trade or technical journal the better advertising medium that publication becomes.

The writers feel that in general technical display is uniformly good, that its directness and simplicity express true art; however, they criticize type display, saying that the distribution of copy, the arrangement of the elements of the advertisement, and the use of white space are not equal to the standards of the copy and the illustrations.

In the chapter on prospectuses, bulletins, and catalogues the writers affirm that many manufacturers make a grave mistake in having the purchasing department order and specify the printing. Such work should be handled by the advertising department, even to the extent of having the advertising department buy all printed material, letter-heads, invoice forms, and the like. Such a suggestion is quite in line with the constructive ideas of the book.

Exaggerated claims for technical products are poor advertising copy, as the authors show. An outline of sources of vital advertising ammunition is one of the helpful contributions of the book. Its plea for sanity in planning for the campaign, in analyzing the product as well as the market, and in aiming the copy, well-planned and executed, to a definite buying group, together with its many helpful suggestions, make this book worth the reading. Some manufacturers, who think advertising an expensive luxury, will have their eyes opened to the possibilities of advertising as an investment; copy men, especially those handling technical accounts, need the book.

BRIEF ANNOUNCEMENT OF NEW BOOKS

Naval Stores; History, Production, Distribution, and Consumption. Compiled by Thomas Gamble. Review Publishing and Printing Company, Savannah, Ga.

Advertising for Trade in Latin-America. By W. E. Aughinbaugh. The Century Company.

Window and Store Display. By A. T. Fisher. Doubleday, Page and Company.

The Federal Farm Loan System in Operation. By A. C. Wiprud. Harper and Brothers.

An Administrator in the Making, James Saumarez Mann. Edited by his father. Longmans, Green and Company.

Handbook of Commercial Geography. New and Revised Edition. By George C. Chisholm. Longmans, Green and Company.

The International Directory of Leaders in the World Trade of All Countries; an Annual Who's Who. American Bureau of Trade Extension, Inc., Washington, D. C.

Sign Posts to Progress. By Otto Kahn. George Doran.

Employment Management, Wage Systems and Rate Setting. The Industrial Press.

Estimating Building Costs. New Building Estimator. By Arthur. U. P. C. Book Company.

REVIEWS OF BUSINESS PAMPHLETS

Costs as an Aid to Management. By John M. Scanlon. The National Association of Cost Accountants, 130 West 42 Street, New York City.

There is an ever-increasing amount of literature dealing with the subject of cost accounting as an aid to management. A large amount of the early literature on the subject dealt simply with the advantages that resulted from using cost accounting to aid the management. However, some of the more recent literature contains concrete suggestions and methods of effecting a close relation between the cost accountant and the manager. Mr. Scanlon's contribution falls within the latter class of literature. It emphasizes the necessity of establishing cost standards which when checked with actual costs and analyzed indicate the places where economies and wastes should be effected. The pamphlet, therefore, explains how standards are prepared and how comparisons of actual costs against standards are made. It also brings out how cost records are converted into efficiency data and gives a method of gauging production. It explains also the use made of reports covering departmental expense, efficiency, and inventories.

While the methods advocated will apply to practically every concern, the illustrations are taken chiefly from a plant which manufactures ball bearings. There is an introductory note describing ball bearings and the chief operations in their manufacture.

The writer advocates the keeping of a continuous record of the progress of each order by operations.

With regard to the cost of idle time, he says:

> It is taken out of costs in proportion to the idle hours, as compared with the possible working hours. The amount subtracted from the costs for this reason, includes the proportion of all items of expense which have no direct relation to production.

The following quotation indicates the writer's style and the subject matter treated:

> When orders have been completed and the current unit cost is ascertained, it is analyzed into material, labor, and burden, and is listed on a form which shows comparisons with previous costs. In this manner any fluctuations that occur are brought to the attention of the management. The element or elements which cause these fluctuations are recorded and also presented to the management. Additional information on the form consists of the number of the good units made and the units which must be scrapped, notations being made on the form as to the manufacturing methods used in each instance. This latter information is essential since several possible methods of manufacture might be used in a given case.
>
> A more interesting phase of the cost system than the collection of costs is the method employed to place before the management the story of the efficiency or inefficiency of plant operations which is hidden in the cost figures. The determination of this information can be ascertained only by a thorough analysis of costs by operations, comparing each cost element with a standard cost based upon the best performance that can be attained under the manufacturing methods in use at the time the comparison is made.
>
> The standard costs are arrived at in the following manner. In regard to labor costs the lowest piece rate paid for each operation, which must be performed under the most efficient method of manufacture known at the time the standard is set up, is determined. It might be remarked that the wage system is on a piece rate basis. Wages are figured weekly. Another feature of the wage system is a guaranteed minimum wage.
>
> The percentage of overhead expense to productive labor based on normal overhead expense under conditions of maximum production is also calculated.
>
> Material cost standards are based upon the cost at current prices of the estimated material requirements. In connection with the system being discussed, standards are revised from time to time as more economical methods of manufacture are put into effect, considering also the fluctuations in the market value of raw materials.

In reference to these records it is pointed out, that the men soon became educated as to the value of the material they were using, and it was not long until the company noticed a great change in the amount of waste. A chart giving concrete results

shows that in four years there was a drop from the average of $2.15 worth of material spent for each dollar spent for labor, down to $1.05. This sort of creative effort produced also a great change in operating conditions. The company increased their yearly production from 42,000 tons to 111,000 tons without adding new equipment, and the quality was changed from the poorest to the best.

Another set of records illustrated in the booklet were worked out for the purpose of inducing a desire for perfect work. By reference to the charts any trouble during the manufacturing process can be traced back to the man responsible. However the author says there is no thought in the minds of the men, that this is a follow-up system designed to enable the management to find fault with the workmen. They recognize it as a system to help them get information which they have not had time to get for themselves, and which they must have in order to do their work intelligently.

The progressive improvements shown by the charts indicate how completely the man has become master of the machine. Mr. Wolf says: "That this improvement is due to increasing interest alone is borne out by the fact that the company does not pay a man more money for a good record, but pays the prevailing union scale for all positions in the plant."

In the progress record charts the period which is averaged is four weeks, and the average to date, begins all over again at the end of each four weeks period. In indicating the standing of the men it is better to do it on the period average, the author explains, rather than on the day average as it tends toward greater continuity of effort. It is the steady progress that really counts and not the spasmodic spectacular high record for any one day.

Mr. Wolf in summing up the results obtained by the progress records concludes:

> I believe that the employer's usual disregard for the individuality of the workman comes largely from the fact that he has been so engrossed in the task of creating an efficient organization to express his own individuality that he has entirely overlooked the fact that in the creation of this thing he has forgotten to extend the same privilege to his employees. If he only stops to think of it, he will recognize at once that he cannot hope to develop the initiative of the workman except by giving him a similar privilege of seeing his own creations grow by leaving the impress of his personality either upon the article produced or upon the progress record of his work.

This pamphlet which Mr. Wolf has prepared comes out of his own experiences in inducing workmen to co-operate with him as manager, in getting out the most perfect product in the largest quantity. The methods are well worth reading since they are tried methods which have brought satisfactory results. The nine detailed charts worked out by the R. B. Wolf company and illustrated in the booklet are of a practical nature and would serve as excellent models for other companies wishing to try the chart system.

Some Notes on Catalog Making. By Samuel Graydon, Wynkoop Hallenbeck Crawford Company, 80 Lafayette Street, New York City.

Because the contents of this volume cover only 29 pages this review is rather arbitrarily placed in this section of the magazine, though it might also equally as well have been placed among the reviews of business books.

The following quotation by Earnest Elmo Calkins, the well-known advertising expert, serves as a foreword:

> Too much cannot be written or said about making the catalog better. It is in its place one of the most important units in the whole advertising campaign. It is what makes effective the direct advertising and the general advertising. It frequently takes the place of the traveling salesman. It is, or ought to be, a work of reference to be kept, filed, and consulted. Therefore it should have everything the writer, artist, engraver and printer can add to it to make it simple, clear, intelligent, and convenient.

To use an overworked phrase, this book does meet a long felt want. The literature dealing with the editing and making of catalogs is all too scant. Possibly this condition may explain the hearty welcome which has greeted "Some Notes on Catalog Making," which in its first form was a practical talk before the Technical Publicity Association of New York City. The fol-

lowing quotation illustrates the importance of the catalog:

From the eight to ten billions expended annually in the United States for publicity, and the six hundred millions for printed matter, more than half is for catalogs and booklets.

Practical indeed is Mr. Graydon's comment:

To my mind, and I think to that of both the experienced user and producer, the simplest is usually the most effective. The worst catalogs in this country today, as I have seen somewhere stated, "are not the trashy product of the cheap printer, but the overdecorated, overprinted, bescrolled and bebordered 'creation' of the half-baked 'artistic printer.'" I have no sympathy for that type of so-called art; neither have I for art for its own sake, in catalog making. Art for your business' sake is what you want in your catalog.

Lest his words be misunderstood, Mr. Graydon adds:

Please do not mistake me, I am not advocating the use of cheap materials or severe mechanical scheme; but the most costly materials and ornate treatment cannot make up for the lack of horse sense used in the vital setting forth of a proposition. Brains in the recognition of possibilities and intelligent treatment of materials, and a preconceived view of the effect of something as yet unproduced, more often result profitably, than the use of costly materials and a multitude of colors and elaborate treatment. Too few pay attention to the basic art principles underlying good typography, such as proportion, harmony, balance and tone, and, what is of great importance, of having the printing suggest the motif of the advertising.

Artistic publicity matter is the most effective in returns, but without such returns there is no excuse for its existence, no matter how beautiful or expensive.

Decoration and treatment that tend to increase confidence or create desire should be utilized, but all "gingerbread" is superfluous and detracts from the real efficiency of the book. You are not trying to convince your prospective customer of your ability to issue a magnificent piece of printed matter, but to favorably affect him as to your product and imbue him with a desire to buy. Your catalog is usually intended to exercise a definite influence as well as to give information; and it should convey progressiveness, and while avoiding ultraconservatism, should carry conviction as to your solidity, integrity, and reputation, and be so conceived as to command the attention of and appeal to the particular class of people you wish to impress.

Of the effective catalog, he speaks as follows:

A catalog to be successful from a distribution standpoint is one which sells goods, promotes enterprises, and wins prestige, reputation, and good-will. It is the dual function of such printing to hold your present customers and hasten belated ones. The truly effective catalog is one in which the superficial physical features are harmonious and blend pleasingly to the eye of the class of people one desires to impress. Its character should create in the mind of the recipient confidence in the sender and his product, crystallize partly formed plans, create new wants, and compel favorable action, and quickly. It should be essentially adapted to its purpose to be commercially profitable to its issuer; and it is successful, from an advertising standpoint, if it accomplishes its purpose, even if it is not an ultra de luxe "thing of beauty and joy forever."

Catalogs like magazines, first have waste circulation because they are not sent to the right party at the right time. How this problem was solved in one instance is given by Mr. Graydon as follows:

We decided that the type of man we wanted to reach on a certain proposition was most susceptible if the mail brought our literature so that he found it on his desk upon his return from lunch, when with a cigar between his teeth he was at peace with things generally. He then had the morning mail out of the way, and had a little leisure to look into our matter before taking up the routine afternoon work. And our list being all local, with a little trial we soon found how to have our stuff arrive at the proper time. A year's record showed 42 per cent responses. It is a watching of these details that gives the largest proportion of returns.

The following points in the preparation of material are given by Mr. Graydon:

In selecting data for the catalog, besides the body matter, argumentative and descriptive, portraying the goods proper, the features of text to be considered should be the policy of the concern, its business methods, reputation, financial standing, facilities for quality and volume, equipment for speed in production and early delivery, views of plant or offices to convey capacity, prestige, stability; also policy of the amount of text to give relating to any section of the book, and as a whole.

Do not make the mistake of giving the copy to

the printer in a most imperfect condition, with the idea of raising cain with it and whipping it into shape after it has been set up, as so many do, who, lacking imagination, cannot see its effect at all until it is put in cold type, when they then rephrase. This all costs money to alter, and is an unnecessary expense (and often a bone of contention between advertiser and printer) and can be to a very large extent obviated if reasonable care is used in editing copy beforehand.

The text should be written by one who is not only familiar with the goods, but who is a student of human nature and can so phrase and portray the subject as to appeal to the reader. He must have the faculty of being able to lift himself out of the rut of stereotyped statements from the seller's viewpoint, and put himself in the position of the particular type of buyer he wishes to impress, to be truly effective. There should be a continuity of thought and sequence of ideas, leading to a logical conclusion.

Eliminate all matter not germane to the subject. Have some one in the sales department write the first draft in his own language and from his knowledge obtained from personal contact with customers. Then take his facts, no matter how crudely expressed, and put them in more presentable shape for publication.

In the matter of illustrations and engravings, select the goods to be illustrated, bearing in mind who is to be impressed; determine the most effective views, sectional, entire perspective, exterior, or phantom. Decide the most practicable treatment to remove objectionable features and make pleasing to the eye. The style of engraving must vary according to the subject, depending on the size of the edition, whether to be electrotyped, kind of paper, and amount of wear to be given the cuts. The photographer should be one who knows how to take pictures designed for commercial reproduction, and the viewpoint selected carefully to avoid distortion. Solio prints of brown tone are most advantageous to retouching. One hundred and seventy-five screen half-tones are more difficult to print, as the mesh is apt to fill, while in one hundred and thirty-three screen more detail is lost in reproduction. One hundred and fifty screen is a good average.

A point that is overlooked more frequently than possibly any other is the following:

Use stock of such proportions that when folded to the size of your catalog the grain will run the same way as the backbone, to prevent cracking, assure better folding, avoid buckling when bound, and lay flat when closed.

If your paper is antique laid, you should have the wire marks run across the page and the chain lines run up and down, as the latter always run parallel with the grain.

Enough quotations have been given to show how extremely practical is this booklet for industrial plants which pay attention to their catalogs. Other pages of the booklet take up such subjects as: the use of inks, combination of different colored papers, the designing of the cover, and the binding, the question of plain or decorative linings, etc. What Mr. Graydon says about a business getting catalog is equally true of his own booklet:

> I doubt your painful Pedents who
> Can read a Dictionary through,
> But he must be a dismal dog,
> Who can't enjoy this catalog.

The Work of Number Eight. The National City Bank of New York, 55 Wall Street, New York City.

"Number Eight" is the clearing-house name for one of the largest banks in the world—The National City Bank of New York. Here is an inside view of its manifold departments and their workings, prepared by the educational department of the bank itself. It is intended to give members of the bank's staff an acquaintance with the operation and growth of the great financial institution. It will serve those outside who are interested in the technical aspects of the banking business a useful outline of how great operations are performed; it will serve the investor, financier, and business man as a manual to help him understand how to bank because he understands what the bank does, and how complex and far-reaching are its modern functions. The mere layman will be fascinated by the size and scope of these functions, and by the spirit—almost of scientific scholarship—which informs these undertakings.

Two main divisions are noted. One contains nearly forty departments whose workings are described as essentially banking functions. These range from the usual receiving and paying tellers' departments through the credit department, the loan, bond, and trust departments to the foreign departments, like collection export and import departments, foreign exchange

traders, and others even more international in scope. The second division lists about the same number of what are called "facilitating departments"—the like of which are found in all large businesses. This is even plainer proof of the size of modern finance, for here are described the translators departments, telegraph and cables, photostat department (to give several copies of items to different departments at once) printing, and addressograph departments—all of which are cogs in a giant machine. Especially interesting are the pages on the financial library, and the regular publishing business conducted by the advertising and publicity department. There is something like a university in such activities. For example, the bank issues five regular publications, including a monthly magazine, *The Americas*.

For the employee himself have been established the personnel, medical, and educational departments—the last a branch of the City Bank Club, which is permanently endowed as an institution separate from the bank. In the club are found smaller departments for housing, direct buying, training and athletics, library, savings, and so on. The impression of size and care grows until the very end; and the complexity of the organization makes it impossible to set forth in detail here any one department. The pamphlet must be consulted for the facts, and also for a helpful glossary of banking terms which has been added in conclusion.

This pamphlet will be mailed upon application to the National City Bank, 55 Wall Street, New York City.

English Public Finance. By Harvey E. Fisk, Bankers Trust Company, New York City.

A very useful purpose is served by the publication of this volume. It would be difficult to imagine a more convenient work of reference for the salient facts in the history of the finances of the United Kingdom than this book of 241 pages. In addition to such data, it contains much concerning the past of British banking, with chief attention being given to the Bank of England, as is natural, not only because the bank forms the center of the British banking system, but also because as the government's fiscal agent, its activities have been closely interwoven with the Treasury's operations.

In the first several chapters is related succinctly the story of the financial events in London that accompanied the outbreak of the war, and of the way in which Great Britain accomplished the financing of its part in the struggle. Tables are presented showing government income and expenditure for each year from the beginning of the war to 1920, the funded and unfunded debt classified according to maturity, a comparison of the country's population, wealth, debt, and national income for the four periods of the Napoleonic War, the Boer War, the Great War, and the period immediately preceding. Figures are also given showing the progressive change in the banking position of the country from year to year during the war period.

The bulk of the book is devoted to a narration of the British fiscal history since its conquest in 1066 by William of Normandy, who grafted on the methods that had been previously used by the Anglo-Saxon rulers for raising revenue, those he had employed on the other side of the Channel. The various forms of taxation resorted to by his early successors are briefly described, and the gradual development of constitutional form of government through the control of the public purse by Parliament is traced.

As is proper, the narrative concentrates attention mainly on the fiscal events that have taken place since 1688, which is a red-letter year in the history of British public finance; for it witnessed the creation of the British funded debt, which has remained in existence ever since. Two other events, important in the annals of the country's finances occurred in the following decade. In 1694 the Bank of England came into being, and two years later the first issue of exchequer bills was put out.

The book traces the growth of the national debt from the time of its creation, and describes the various sinking fund arrangements that were instituted at ifferent periods for its reduction. As an indication of the crude notions that were entertained in the eighteenth century with regard to the sinking fund principle, it is related that during the Chancellorship of the elder Pitt,

money was borrowed for the sinking fund at a rate that was actually higher than that borne by the debt redeemed. The successive refunding operations are also discussed. A chapter is devoted to a description of the ancient exchequer, and another to the operation of the present fiscal system.

In a separate part of the volume the history, organization, and functions of the Bank of England, the Bank of Ireland, and the Bank of Scotland, are given. Appended at the end is a detailed table of the existing national debt, also quotation tables for consols and Bank of England stock since 1697, and for other government issues since 1910.

Cost Accounting in the Laundry Industry. By Fred Elliott. The National Association of Cost Accountants, 130 West 42 Street, New York City.

Up until about seven years ago cost accounting was virtually unknown in the laundry business. Consequently, in many cases prices were not what they should have been, in view of the actual expense of production. However, at the present time many laundryowners are using a general accounting and cost system which has been prepared for the Laundryowners' National Association. Mr. Elliott's booklet deals with some of the chief features of these systems together with some practices that are not observed by those who are using the systems. It contains a list of the accounts of the general accounting system being used by the Laundryowners' National Association.

The writer says, there are four general classes of laundry service, namely, bundle work, rough-dry work, wholesale flat work, and wet wash. The original system of the above association was designed to show the monthly and cumulative costs of these four classes. The cost accounting for these four main classes of laundry work is described somewhat in detail.

Some of the cost items treated are labor, supplies, water, gas, repairs, power, idle machines, collection and delivery expense, and general expenses. The necessity of departmentalizing the factory as a necessary requisite to actual costing is emphasized. The departments required to launder the four classes of work and to enable the correct costs of the four classes to be ascertained are mentioned. The character of the operations in the departments is described at some length including the marking, machine washing, hand washing, extracting, starching, drying houses, drying tumblers, flat work ironing, dampening, and machine ironing, hand ironing, miscellaneous handwork, and sorting and wrapping departments.

The booklet contains some notes also on the system of the Laundryowners' National Association which has to do with the keeping of monthly costs for fifteen classes of laundry service rather than the four classes mentioned above. The author believes that the calculation of the monthly costs of so many classes involves too much work for the average laundry but believes that the keeping of the costs of seven classes of work will be found sufficient in most laundries, the three classes not mentioned in the four classes above being shirts, collars, and the flat work which comes in both bundle and the rough-dry bundles which are known as family flat.

The author goes on to say that if intelligent prices are to be set for laundry service the cost of laundering each different article must be definitely ascertained. By way of illustration the following may be quoted:

> The main objection raised against article costs is that the total number of pieces of each different kind must be computed each cost period. This task, however, is no greater than the one of segregating both the earnings and the pieces to the extent required by the fifteen class system. Wherever it is necessary to reduce the clerical work to a minimum a four, a five, or a six class system can be used and the article costs of one of each of the classes can be compiled each period or as frequently as possible. In order to obtain article costs it is advisable to use predetermined costs for each operation. At the end of the periods the differences between the actual cost of the several operations and the predetermined costs of the articles which underwent those operations should be distributed to the various articles in proportion to their respective predetermined costs in each operation. By weighing a number of articles of each different kind, the average weight of each of such articles may be learned. These weights will be found very useful in predetermining the washing, extracting, and drying costs.

The collection and delivery expenses ought to be distributed on the basis of weight and the general expenses on the basis of pieces.

The conclusion is an appendix which is a summary of the standardized accounting system and the cost system of the Laundryowners' National Association. The Appendix was prepared by the Research Department of the National Association of Cost Accountants.

It might be remarked in this connection that the forthcoming year book of the National Association of Cost Accountants will print a paper on uniform methods and standardized costs read by Burton T. Cooke, Director of Department of Cost Accounting of the Laundryowners' National Association before the Second International Cost Conference of the National Association of Cost Accountants held recently in Cleveland. The year book will contain also the other papers presented at the Conference and the discussions which followed.

Creative Spirit in Industry. By Robert B. Wolf, President of the R. B. Wolf Company, an organization specializing in designing, constructing, and operating pulp and paper mills. Association Press. New York City.

How to release creative spirit in industry by arousing the workman to a realization of the necessity of using time constructively, is the theme of this bulletin.

The way to arouse the workman's interest and creative spirit, as pointed out by its author, is to give the worker a record of his performances so that he may know what has happened in the past. Then by comparing his present work with his past he is able to create conditions which make for better operating results in the future. This means, of course, not only consciousness of progress, but also a lively interest in competing with his own record.

The idea of competition as viewed by Mr. Wolf is not survival of the fittest (mere animal type of competition) but as competition in utilization of time in productive effort, which must always be competition with the past.

Progress charts and methods successfully used by the R. B. Wolf company are outlined in the pamphlet. Nine charts dealing with the measuring of past performances show not only the progress of the individual workman, but also the progress made by the entire plant. The individual records are necessary in order that the workman may know from day to day how he is improving in the mastery of the process.

The charts are so arranged as to show the workman the value of time and its use in production. Too, the charts record facts which enable the employee to recognize the natural laws underlying the process. "For the workers' lack of interest," says the author, "comes largely from a lack of knowledge as to what conditions actually are. Knowledge is the basis of conscious interest in work."

One illustrated chart shown in the pamphlet is from that branch of the wood pulp industry known as the sulphite process and shows a cooking chart designed to give the cook information about the reactions in the digesters in which the woodchips are cooked. Before the introduction of cooking charts the control of the temperature was left to the unaided judgment of the cook and great variation in the pulp was the result. The cooking charts plotted by the cooks themselves helped greatly, as they furnished quick visualization of the works. Immediately after the introduction of the charts it is pointed out that a very marked increase in the uniformity of the pulp was noticed, and a yield from a cord of wood increased to something over 5 per cent.

But the author believes that the introduction of charts designed to aid the workman and arouse his interest is not enough, for he says:

> Soon we found that it was necessary to give some sort of continuous progress record if we were to keep up interest in the work, because no man could carry in his mind anything but a general impression of his progress from day to day. Several good records for one day are only like so many good scores in bowling. They are a source of satisfaction at the time, but just as a score in bowling denotes our real mastery of the game, so does the progress record measure the man's increasing mastery of his work. Without these records men will not think of improvements in the process, and they cannot be blamed for becoming indifferent. How long for instance would a superintendent or a manager retain his interest if his cost sheets were withheld? The

executive must have quantity, quality, and economy records otherwise his interest soon lags. Why then expect the workman to be interested when he is not furnished with a record which at least reflects one of these elements?

Quality records, Mr. Wolf believes, are of the greatest importance, as they bring the individual's intelligence to bear upon the problem and as a consequence, by removing the obstacles to uniformity of quality, remove at the same time the obstructions to increased output. In speaking of quality the author does not necessarily refer to the quality of material produced as most of the companies' records refer to the quality of the work performed; in other words the nearness to which the workman approaches the ideal standards which he has helped to form.

For as Mr. Wolf puts it:

The democratic co-operative forming of these standards by the joint work of the trained technician and the practical workman is absolutely essential, otherwise continuous progress will not be made. The whole plan must be really educational in nature, and to be so the records must record the natural laws of the process, and the individual's degree of control of forces in the material elements that he is using. The more factions that can be recorded the greater the interest in the work.

Records used by the company invariably prove themselves to be an incentive to greater productivity. This incentive, the author says, comes from giving men knowledge of the past accomplishments. It is the conscious use of time that stimulates.

Cost charts used fully describe the job, the total cost for labor, and material to date is given as well as the cost of labor and material for the previous day. Then below this is listed an itemized cost of all materials used.

Our Public Debt. By Harvey E. Fisk, Bankers Trust Company, New York City.

In this timely little book which outlines public debt from the Revolutionary period up to the present day, the reader finds facts not only of historical but also financial interest.

In discussing the time when Alexander Hamilton was Secretary of the Treasury, attention is called to the fact that the national debt amounted to only $80,000,000.

This was divided in three parts, namely, the indebtedness held abroad, the domestic debt of the Confederation and the debts of the individual states, which had been incurred for the common benefit.

Mention is made that to cement the union of the states and to bring about the co-operation of the southern states not so heavily in debt and therefore opposed to the debts of the northern states, it was necessary to guarantee the location of the capital of the United States on the Potomac.

Acting on Secretary Hamilton's suggestion that the foreign debt should be "immediately put on an active basis by the payment of the principal and interest then in arrears and the making of such arrangements for the remainder of the debt as would provide for its liquidation at an early date," Congress authorized a new issue of bonds for $12,000,000. A part of the proceeds provided a fund to apply on the domestic debt, and to buy in the market such obligations as were purchasable below par.

About $700,000 in bonds were issued to defray the cost of six frigates to protect our Mediterranean commerce. On account of strained relations with France a bill authorizing the President to borrow $5,000,000 for use in the event of war was passed.

At the expiration of Hamilton's term the public debt was $76,781,953. Albert Gallatin, the new Secretary under Jefferson, by able administration reduced the amount in 11 years to $45,154,189.

The war of 1812, however, added to the nation's burdens, and by 1815 the debt had increased to $127,042,341, the maximum amount up to the outbreak of the Civil War. The years between 1816–1836 are in the period of "Surplus Financing," due chiefly to the import revenues which increased greatly after the declaration of peace. In a report by Secretary Taney on December 1834, he states that on January 1835 provision would be made for the entire outstanding debt.

This must have been the time of which Washingtonians speak—when the side of

the Treasury building bulged out of plumb, from the weight of the stored bullion. But the prosperous time came to an end in 1837. To finance the war with Mexico, and to adjust accounts with the Republic of Texas, bonds were issued for $49,000,000.

In 1861 at the outbreak of the Civil War, President Lincoln recommended that Congress "place at the control of the government, at least 400,000 men and $400,000,000."

The issuance of notes to raise this amount is described in the book as follows:

> This first issue was limited to $50,000,000, and up to the date of the general suspension of specie payments every note presented for payment was promptly redeemed in coin. This issue was accepted also in payment for customs duties. In the following year (1862) on the twenty-fifth of February, Congress enacted a law providing for an issue of $150,000,000 United States notes, which were to be lawful money, and a legal tender in payment of all debts, public and private, except duties on imports and the interest on the public debt. Subsequent legislation increased the authorized issues to $450,000,000 and this maximum was reached in June 1864. The right of legal tender was also given interest-bearing Treasury notes of which $477,595,000 were issued; a total of obligations having legal tender rights amounting to nearly $1,000,000,000.
>
> The two great war loans were the three-year notes bearing interest at the rate of 2 cents a day on each $100—the "Seven-Thirties" as they were called—and the 6 per cent bonds redeemable after 5 years and payable in 20 years from date, popularly known as "Five-Twenties."

The actual value of a paper dollar in 1864 was but 38.7 cents, and in 1865 was 63.6 cents. Thus while the Treasury was nominally borrowing money at 6 per cent, it was actually paying 12 per cent in 1864 and 8 per cent in 1865.

In a chapter replete with dollar signs and figures, Mr. Fisk shows how Congress liquidated the Civil War debt.

The expenses of the Spanish War were provided for on a scientific basis, by imposing taxation on internal revenues and by the sale of bonds. An issue of $200,000,000 3 per cent ten-twenty year bonds were authorized, sold at par, and immediately thereafter were quoted at a premium.

In 1900, the Treasury being burdened with surplus revenues, Congress saw the futility of endeavoring to buy up the Fours of 1907 and the Fives of 1904, so passed an act providing for the refunding of the Threes, Fours of 1907, and the Fives, into 2 per cent thirty-year gold bonds. This operation was successful, for by 1907, $646,250,150 had been converted, thus saving the government $16,551,037 in interest.

In 1912, Congress authorized the issuance of 2 per cent and 3 per cent bonds for the building of the Panama Canal, and later in 1917, under an amendment, $225,000,000 of the unissued bonds, were included in the authority for the issue of Liberty bonds.

Literally in figures Mr. Fisk takes us down to the Liberty and Victory bond issues of the late war. Then he adds:

> The people of the United States may well be proud of the debt paying record of their government.

In concluding part one, he writes:

> We can well be proud of the achievements of the past and look forward confidently to a future which may be expected to bring with it equally great achievements. Let us hope that the resort to the use of the public credit in the future may not again be required for the conduct of war, but, if at all, for the development of conditions which will make life better worth living, and for the maintenance of a just and permanent peace among the peoples of the earth.

In part two there are chapters dealing with Comparative Data; The Old Debt; The War Debt; The Banks and United States Bonds; Taxation; Coupon Bonds; Registered Bonds; Lost, Destroyed, and Defaced Bonds. Tables show Public Debt Statements; Transfer Books—Open and Close; and the Trend of the Market.

Part three, of special value to Liberty bond holders, contains tables giving income yields for Liberty bonds at 3½ per cent, 4 per cent, 4¼ per cent, and 4¾ per cent.

Cost Methods in a Woodworking Plant. By J. J. McCaffrey, National Association of Cost Accountants, 130 West 42 Street, New York City.

On the subject of woodworking costs little has been written. This pamphlet does not describe a complete cost system for a woodworking shop but simply cost

methods in a plant which manufactures office supplies and certain other fabricated wood products. The principles and methods dealt with are applicable, however, to almost any woodworking shop.

An organization problem related to cost accounting which is always of interest is departmentalization. The pamphlet mentions the factors to be considered in dividing up a factory into departments and contains a list of woodworking departments arranged according to sequence of operations.

Classification of orders and the disposition of the various copies of orders are outlined. The methods of recording direct labor costs are briefly set forth. In this connection, a time card with some features not at all common is shown. For example it has a list of manufacturing operation numbers and expense operation numbers marked on it which facilitates the making of the original records of labor costs.

> Expense operations are named and numbered in the same manner as production operations, and are listed on the same operation time cards, the same type of card being used in all cases. No order number is used, but for labor chargeable to a department the letter "N" is used as a classification; for labor chargeable to the wood plant only the letter "W" is used. In addition there are certain expense operations that cannot be charged to a single department or to any one plant. These must be distributed to all three plants. For items of this kind, the letter "M" is employed. Of course, it makes no difference what letter is used as long as it fits in with the general system of classification or symbols. Expense time cards are sent to the time department, and are treated in exactly the same way as production time cards. They are also filed according to department numbers and operation numbers. At the end of each month the total of each expense operation is compiled and reported. This phase of cost accounting will be discussed later in this article in the section on Reports.

A bonus system with some interesting features is described in detail. Material and burden costs are also treated in the article. In connection with the latter the emphasis is placed on those items wh ch must be handled in accordance with local conditions, such as, repairs to machinery and equipment, finishing material, etc.

In regard to the latter the author's comments are worth reproducing:

> One of the most important burden charges in a woodworking plant is lumber waste. Extra care must be taken in figuring the cutting bills and in taking the periodical inventories. Inventories in storage should be taken at least every three months, and more frequently if possible. A complete report showing the total consumption of each kind of lumber; the amount charged to cutting bills; and the waste shown both as a percentage figure and also in actual number of feet should then be made up. Copies of this report should be sent to those interested in order that they may investigate excessive wastes and be in a better position to judge the most profitable grades of lumber to buy. In many cases the highest priced grade is the cheapest to buy. This fact, however, can only be definitely determined by the waste report.
>
> The method of figuring lumber consumption has a vital bearing on final waste figures. Some concerns bill lumber at what is known as "roughing out sizes," which is usually a couple of inches larger than the finished size. If the lumber consumption is figured on the "roughing out size" instead of the finished size, there is bound to be a difference in the waste percentage. In the plant under consideration it is customary to bill everything at the finished size, the machine operator allowing extra according to the nature of the pieces being machined.
>
> It often happens that certain small articles can be made from the cuttings or waste from larger articles, in which case some concerns assume the position that their material cost for the smaller articles is zero. It may be quite true that these cuttings would be absolute waste were it not for the smaller article, but, on the other hand, if there are no cuttings on hand, these smaller articles will have to be taken from good stock, in which case the order must be charged with the amount of lumber required. By charging every order with the amount of lumber required at finished size regardless of whether taken from cuttings or good stock and distributing the waste as shown by the inventories, every order bears its just share of this expense and the total waste of all operations is taken care of. In comparing waste percentage figures with those of other concerns it is well to compare first the methods of figuring the actual amount of material consumed.

These cost reports are briefly described. One shows the cost value of the goods produced. Another is the department expense report which includes every item of operating expense covering twelve months.

CHRONICLE AND COMMENT

WELFARE WORK

Does welfare work pay dividends? Is it a frill growing out of the war which may profitably be discontinued in this wave of industrial economy, or is it good sound business for all times?

After a careful study of these questions with existing and indicated future labor conditions in mind, the Board of Directors of E. I. du Pont de Nemours and Company has come to the conclusion that welfare work does pay and by all means should be made a permanent feature of management. The board backs its decision with a revised program of "Welfare Plans" for the du Pont company and its subsidiaries, a program embracing in all about 30,000 employees.

The company finds that the welfare work which it has done in the past, extending over an experience of 15 years or more, has induced greater initiative among individuals; inspired a willingness to work seldom aroused by any other agency; eliminated waste both in time and materials; led to the profitable utilization of by-products, and returned numerous other benefits of which absence of labor troubles is important.

A period of keen competition is expected with the return of business to normal, during which a maximum of loyalty, co-operation, and inventiveness among employees will be most desirable. Fair treatment of workers has brought these assets in the past; the company sees no reason why they should not continue to bring them in the future when the need for them will be greater than ever before.

Further, the present is looked upon as a golden opportunity to convince labor that the employer of late years has been really on the square in his professions of good-will; to remove the impression of some that welfare work introduced during the war was a concession forced by labor's position and not prompted by any genuine desire of employers to better industrial conditions. The company does not look upon its welfare plans as concessions, but as investments in sound policies which bring certain returns when made on the proper basis.

The du Pont program savors somewhat of the rewards for service plan adopted by the armies in the World War. Each worker is expected to do his duty to the company, for which he is entitled to a certain fixed wage. But when the worker does more than his routine duty, the company believes he is a worthy subject for reward in addition to his pay.

There is nothing new in the general features of the du Pont program. All of them have been tried and are in practice in many other companies. The present interest is in the particular features selected from a large number and the provisions that have been agreed upon to make them conform with new conditions. The long experience of the company in work of this character, its unusually successful record with labor, and the care with which it went about preparing its new program, make the plans of more than ordinary value.

As summarized briefly, the six plans adopted by the directors are:

1. Bonus plan: For rewarding in a special manner those employees who have contributed in an unusual degree to the success of the company by their inventions, ability, industry, and loyalty.

2. Merit pay plan: For rewarding continuous and satisfactory service for works pay-roll employees.

3. Stock subscription plan. By which an opportunity is provided for employees to invest their surplus earnings on easy terms in such a way as to share in the profits of the company while enjoying the security afforded by the debenture stock.

4. Suggestion plan: For encouraging suggestions by employees for the improvement of company processes, methods, and equipment. Employees are rewarded according to the value of the suggestion adopted.

5. Group insurance plan: By which the company insures the lives of employees of six months' service or more without cost to the employees.

6. Benefit and pension plans: Through which provision is made for compensation to employees

of the company who are injured in the performance of their duties, for compensation to dependents of those killed in the performance of their duties, and for retiring upon pension those employees who have rendered satisfactory service over a number of years and whom it is advisable to relieve from further active duty on account of advanced age, sickness, or other incapacity.

In general these plans have a twofold purpose: reward for meritorious service; reward for continuous service. The incentive for remaining in the company's employ is pronounced throughout the program, and due consideration is given to existing unemployment growing out of depression. In addition to the usual rules, these provisions have been added to define continuity:

1. Continuity of service shall be considered unbroken and full service credit given employees for all time covered by formal leave of absence on full or part pay, except that pensions shall be computed upon the time of actual service.

2. Continuity of service shall be considered unbroken, but credit shall not be given for periods in which no actual services have been rendered—(a) if a formal leave of absence without pay has been granted; (b) if salaried or pay-roll employees are re-employed after having been laid off on account of reduction in force, termination of special work or idle mills, provided the lapse of time between date of dismissal for such reasons and the date of application for further work does not exceed one year.

The "Merit Pay" plan makes a particular appeal to the employee who has been temporarily laid off or granted a "leave of absence without pay" because of idle mills, to return to the company at the earliest opportunity. It is a new feature of the program, only recently effective, and provides:

1. All pay-roll (works) employees who have been continuously employed by the company for two years or more shall be eligible for rewards based on their length of service and wages as follows:

After 2 years' continuous service—
5% of regular wages
After 5 years' continuous service—
10% of regular wages
After 10 years' continuous service—
15% of regular wages
After 15 years' continuous service—
20% of regular wages

2. In order to secure these rewards it will be essential that employees do their work in a careful, workmanlike and satisfactory manner; that they obey the orders and instructions of those in authority; and that they carefully observe at all times the rules of the company.

The right to withhold any or all of the awards under this plan is reserved by the company.

The "Bonus Plan" provides for stock awards to employees for conspicuous service in the way of inventions, unusual ability, industry, and loyalty. A Class "A" award is the higher and is made without condition as to length of service; to win a Class "B" award an employee must have been continuously employed for at least two years. Recommendations for bonuses are made annually by department heads and passed upon by the executive board.

Since 1909 a stock subscription plan has been in effect with this company. The new plan embodies an important change which meets the criticism of stockholding employees against stock fluctuations, especially when downward as at this time. The debenture stock which is now issued for voluntary purchase by employees is at a guaranteed par of $100, returning a guaranteed interest of 6 per cent, and in addition, other returns based on net profits and the stockholder's length of service. It is of interest to note that in 1915 there were 29 per cent of du Pont employees owning stock; in 1920 the number had risen to 35 per cent. Many former employees who left the company at the end of the war also hold stock.

Perhaps the most broadly applicable of the several plans adopted by the company is the "Suggestion Plan" which has been very comprehensively worked out. All employees are eligible for awards under it.

First, the employee writes out his suggestion on forms provided for this purpose and submits it for consideration in a manner designated by the department head. The idea is to assist the employee in every way possible in making his suggestion workable, improving upon it, and of getting something of real value to the company. It is expressly provided that

assistance in the development of the employee's idea and in the preparation of his suggestion, shall be given by his superiors upon request. This assistance saves employees wasting time upon ideas which are palpably impractical or which have unsuccessfully been tried out before.

But the rules themselves tell the story very explicitly:

All suggestions shall be fowarded to an individual designated to handle suggestions in the department in which the suggestion originates, who will make a thorough investigation, securing advice of appropriate members of the organization best qualified to pass upon the features involved, and also as to the applicability of the suggestion to all departments of the company.

Should a suggestion be applicable to another department of the company, such suggestion shall be reported to the interested department for consideration and treatment by that department, in which case the suggestor shall receive the same consideration and award as if he were an employee of the department adopting the suggestion.

Discretion and judgment will be exercised in differentiating between cases where employees suggest ideas applicable alone to their own work and applying to details which are within their control. In other words, an employee is not to be rewarded under this plan for an idea or improvement which it is reasonable to expect him to develop as a part of his regular duties. This in turn will not be construed to render ineligible such employees, for instance, as research chemists, designing engineers, bookkeepers and others, who while they should not be rewarded for improvements involving only the simple application of well-known chemical, engineering, or bookkeeping principles, shall, nevertheless, be beneficiaries under this plan if their ideas involve marked and well-defined ingenuity and originality.

The award, for suggestions which are accepted and put into use, is 20 per cent of the estimated annual saving resulting. The estimate is made by competent authority within the department in which the suggestion originated, but in no case shall the direct cash award exceed $200. The further provision is made, however, that when the saving is especially large, or the suggestion of unusual value, the suggestor may be recommended for a Class "A" or Class "B" bonus. When the value of the suggestion is intangible—an improvement for better co-operation between individuals or departments, a safety device, etc.—the award is determined by departmental authority on an equitable basis.

The purpose of the company in these suggestions is to do more than encourage employees to drop ideas into a box for someone else to work out. It desires, first of all, to develop the employee through giving him contact with his superiors so that he will be encouraged, rather than discouraged in his efforts; second, to make all improvements originating with employees as broadly applicable as possible throughout all departments of the company and its subsidiaries; to give suggestions real, expert attention from men particularly designated for that purpose in all departments.

The board of directors feels that the incentive to suggest new ideas is heightened by publishing the names of the suggestors and their awards throughout the organization at regular periods, though the awards themselves are immediately made when the suggestion is adopted. But, this matter of publication is left to the discretion of department heads.

As is usually the case, the group insurance, pension, and benefit plans are based largely on length of service. These may be regarded more strictly in the class of what has come to be regarded as "welfare work." The several other plans, however, while classified as "welfare" by the directors, are really nothing more than out-and-out incentives to better service by workers. They do not give something for nothing; in every instance the employee must earn his qualification in some way that profits the company—a fact which makes the plans practical and fair to both sides, without any flavor of paternalism.

BUSINESS ETHICS

Bearing On Us, house-organ of the Bearings Service Company, has adopted a code of ethics for every one of their service stations.

Let every Service Station agree that it is necessary to put our best efforts into our desire to be honest and efficient to the extent that we will do these things:

1. Teach car owners how to use their cars and take care of them.

2. Don't take advantage of their ignorance to press upon them unnecessary repairs or work of any kind for our own profit.

3. Only charge for actual work done; not for the education of incompetent apprentice mechanics. "No fix—no pay." If it can't be fixed, say so!

4. Use the best quality parts for repairs—never the inferior. Let the name of the manufacturer mean something, and never use a substitute for the extra profit in it because it imitates a better article with a reputation that is worth buying.

5. Be prompt to serve. Waiting for repairs or parts is not what the buyer expects after the salesman has finished with him. Sales are often made because of promises that prompt service goes with a certain make of car, and the buyer buys because he wants a car to run—not to fill a stall in a repair shop."

EMPLOYEES' MAGAZINES

In the perusal of a large number of house-organs, monthly, the writer has been struck by the peculiar attitude of the editors of the publications, and the special writers of many of the articles. There is a tendency to talk down, to preach and to patronize that seems to the writer to be extremely injurious to the purpose of the employee's magazine.

This attitude is not displayed, of course, where the magazine is written by the employees for the employees but it prevails most frequently in those magazines which are published by the company for its employees or where the editor is a member of the executive or managerial staff. In such publications the editorial policy is the weakest part of the magazine—as indeed it is in many commercial publications. The section in these house-organs that is devoted to factory activities, personal squibs, gossip, etc., is written in a straightforward enough manner. But the special articles and the editorials frequently are either "highbrow" or embody the evils already mentioned.

On the other hand there are articles by superintendents and foremen and sometimes by the works manager or president, in both types of house-organ, that are interesting, chatty, and informal. But in the editorial policy, on the whole, there is an alarming tendency to force opinion; to command when the editorial should suggest; to compel, when it should urge. There is another tendency, no less offensive, and that is where the writer patronizes the readers—tells them how they ought to appreciate what is being done for them, etc.

The house-organ is one of the strongest links between the employer and employee but it should not be made a bulletin of "don'ts" or a sheet of self-approval which the company gets out to hand to the workers. In such instances the purpose of the house-organ is completely lost. Instead of being a paper of good-will which every member of the plant reads and passes on to members of his family to read, it is laughed at and "chucked" into the waste-barrel on the way out of the factory.

Many house-organs coming to the writer's desk are splendid examples of what a house-organ should be and most of them undoubtedly are read with keen interest and enjoyment by the employees for whom they are intended. Swat the humbug before it specks the plant paper.

MODERN MARKETING

A feature in buying in the markets today is the critical attitude of buyers. Commenting on this peculiarity, *The Guaranty News*, employees' organ of the Guaranty Trust Company, says that where as a year or two ago those who were making purchases concerned themselves only with getting something that would more or less fill their requirements, they are now insisting upon the exact letter of the specifications and if these be not adhered to in every particular, the goods are rejected.

> Even something more than fulfilment of specifications now gauges the marketability of these wares; there must be good presentation, quick delivery, and a dozen other tangible or intangible elements that make up quality of service.

One of the reasons for this condition might be found in the fact that, with abundant stocks of goods, surplus labor in all fields, and a diminished demand for most things, a buyer can demand exactly what he wants—and generally get it.

This disciplining of sellers will probably have far-reaching effects upon all phases of the production and distribution of goods and services. The producer whose wares meet the specifications of the buyer will have to insist that every bit of material, every operation, entering into the product shall be selected or performed with the one purpose of satisfying that buyer's desires.

PLANT READING TABLE

In order that the men who read *The Eventually News*, employees' magazine of the Washburn-Crosby Mills, may know what is happening in other plants, the editor of *The News* has placed on a table in the plant cafeteria, these exchanges from other industrial concerns. All employees, who care to do so, are permitted to take these employees' magazines home, read them over, and return them.

These publications include practically all of the employees' magazines of the largest industrial organizations in the United States and Canada sent to the Washburn-Crosby Mills in exchange for *The News*.

In addition to plant house-organs the publications of numerous correspondence schools, societies, and other organizations are at the disposal of the employees.

ECONOMICS FOR EXECUTIVES

George E. Roberts, Vice-president of the National City Bank of New York, has edited a comprehensive course of study in economic principles for business men, entitled "Economics for Executives."

In *Number Eight*, employees' magazine of the National City Bank, Mr. Roberts gives as "the science of business," the following:

> In these days of specialization, the range of activity of most persons is often so closely limited to a specific field that some means of keeping in touch with outside conditions and with the problems and principles that are common to all fields of business becomes imperative. Particulary is this true with men and women who have, or hope to have, a part in the determination of policies.

The course, which is designed for home study, comprises a series of 25 study-units, of pocket size. Each study-unit is brief and is supplemented by preliminary lecture material, study-questions, summaries, and practical problems.

The topics treated in the study-units are listed as follows:

1. Economics and the Individual
2. Primary Industries
3. Manufacturing
4. Railroad Transportation
5. Railroad Regulation
6. Marketing
7. Capital as a Factor in Production
8. Enterprise and the Reorganization of Business
9. The Financing of Production
10. Money and Banking
11. The Function of Prices
12. What Determines Prices
13. Price Movements
14. Profits
15. Interest
16. Rent
17. Wages
18. Labor Problems and the Labor Movement
19. Business Cycles
20. Foreign Trade and Exchange
21. A Creditor Nation
22. Governmental Regulation
23. Taxation
24. Investment and Speculation
25. Economic Progress
26. Index

Vice-president Roberts believes that the course will prove especially valuable to bank executives since it treats of the various factors that influence business and financial conditions, and covers topics upon which bankers are being continually asked to advise.

HEALTH TALKS

Health talks are recent features of several house-organs. This is either due to health precautions that employees must take to avoid fall and early winter colds or to cure summer insect-stings and summer illnesses.

Wellsworth Life, employees' magazine of The American Optical Company, consults the "absent records" each month and has the plant physician write an article on the disease which has kept the largest number of employees away from their work for that month.

The current number of the house-organ is a discussion of dysentery; its causes, its cure; and its temporary relief until a physician can be called.

"How to stop your fall cold at the outset," is the subject of an article in *Number Eight*, house-organ of the National City Bank. The article is prepared by the bank physician. This bank also finds that the health article most helpful is the one that affects the largest number of absentees. The discussion treats the start of colds; the treatment for colds and the cause of catarrh.

In another number of *Wellsworth Life* the health of the employees, based on absent records, indicates the large number of employees who are forced to be away from work because of minor illnesses. It was found that 871 employees were absented from their work either for a long or short time because of colds; 857 from headaches; 580 from indigestion.

For the more technical ailments: 261 from constipation; 201 from throat trouble; 189 from eye trouble; 139 from boils; 70 from teeth.

"Hemorrhage" is the subject treated in great detail in *The Bell Telephone News*, employees' magazine of the Chicago Telephone Company. In this plant, as in preceding ones, the article is prepared by the staff physician. Hemorrhage is described in detail and illustrated with photographs. The treatment of hemorrhage in case of emergency is carefully explained so that any employee can assist a fellow worker in case of emergency.

INDUSTRIAL COURTS

Governor Henry J. Allen of Kansas predicts that industrial courts in every state in the Union will soon bring industrial peace to America.

"A year and a half ago," said the governor, "the opponents of the industrial courts plan said that it would fail in Kansas. I have today prepared figures which show the result of a year and a half of the court's activities. Of these, the most startling is the fact that strikes in coal fields, which before the court was established averaged 13½ a month, now do not occur at all."

During the time the court has operated, 30 cases have been brought before it. Of these 8 have been decided. Twenty-seven decisions have been acclaimed by both capital and labor as just. Meanwhile, there has been industrial peace in Kansas.

Ax-I-Dent-Ax, employees' magazine of the United States Smelting, Refining and Mining Company, cites the three tests the court has had to meet as outlined by Governor Allen:

First—after a year of operation those responsible for the court had to go before the people. In every industrial center of the state, the people upheld the court.

Second—the state Supreme Court held the law constitutional.

Third—the law was shown to help production. Fewer miners produced more coal after the law than before, and they were paid more for their work.

There are almost 150,000 men working in the American Federation of Labor as war secretaries. They draw annually from the slender purse of labor about $6,000,000 in salaries and their jobs depend upon a perpetual state of warfare between capital and labor.

SALESMANSHIP

Customers are often discouraged by clerks. *The Bulletin*, house-organ of Lindeke, Warner and Sons, Inc., cites an interesting case where a sale of hosiery was being displayed by a large retail establishment. A young woman picked up the hosiery and examined it but said they were too thin for her use.

The saleswoman shrugged. "What do you want for $2.49," she said. She then showed the young woman the next price hosiery but that happened to be too expensive. The sales clerk continued to depreciate the cheaper hose in an effort to induce the customer to buy the more expensive. Of course the young woman would buy neither and so a sale was lost.

The moral to be drawn from this anecdote is well brought out by the editor. He says:

While it is effective in retail selling, to compare merchandise of different grades and prices one must accompany this comparison with the right selling talk. There is such a thing as comparing merchandise in such a way that the customer becomes discouraged with it. The

result is that she does not buy anything. Compare goods of different prices, point out the advantages of the better, but do not disparage the cheaper.

WOMEN WORKERS

The 1920 Census quotes 7,000,000 women workers of all classes in the United States. A few days ago, Secretary of Labor Davis estimated the number at present employed to be 12,000,000. *Store Chat*, house-organ of Strawbridge and Clothier, says in the current issue that according to the Census Bureau, women constitute 20 per cent of the wage-earners and salaried workers of the country.

It is true that nearly every trade and profession claims at least one woman worker, but the Census enumerators dispel all anxiety that men may be crowded out of their regular professions and trades, by some very illuminating figures. It is rather startling to note that 15 per cent of these 7,000,000 women are engaged in agricultural pursuits.

Factory work employs about 16 per cent of female labor. Opportunities for women workers in factories must necessarily fluctuate according to the state of trade.

School teaching commands by far the largest number of women. Sixty-seven per cent of all persons in professional employment are women.

LABOR UNIONS

Judge E. H. Gary, at the annual meeting of the stockholders of the United States Steel Corporation, made several interesting references to labor unions which *The Morse Dry Dock Dial* reprints.

It is commonly unknown or overlooked, according to Judge Gary, that no more than 10 or 15 per cent of labor is, or was, at its highest point during the war, actually included in the membership of unions. He believes that workmen do not voluntarily seek to join the unions, do not search for leaders to form and maintain the organizations; on the contrary, self-appointed leaders seeking profits for themselves, solicit and even coerce workmen into becoming members.

Judge Gary feels certain that workmen know nothing and have little to say in the management of the union and he asserts that he never heard of books being kept or accounts being rendered to the rank and file. It is plain, he declared, that union leaders cannot be said to represent "Labor" as a class, first, because only a small per cent of labor is connected with unions and second, because a relatively small number of the members of unions actually participate in any action taken.

Complete unionization would be the beginning of industrial decay. It would reduce production and thereby increase the prices we all would have to pay. Not only would it not improve the conditions of the workman, but carried to the extreme desired by labor leaders, it would lead to the distress, starvation and economic downfall already brought about in all its terrible aspects in Russia.

Judge Gary believes that unions may have been justified in the past for workmen were not always treated justly; but workmen today know when they are well treated. They are capable of bargaining individually and getting recognition of their skill and ability, unhampered by the lazy drone.

Public opinion has already condemned unions because of the terrible waste from unwarranted and unnecessary strikes, brought about only because of their benefit to the union leaders. In the opinion of the majority of employers and employees, there is no longer any necessity for unions; and no benefit or advantage from them will accrue to anyone but the union leaders.

TELEPHONE SALESMANSHIP

William Maxwell, Vice-president of The Thomas A. Edison Company, Inc., in discussing the advisability of a nation-wide movement to speed up selling methods for American manufacturers made the following statement:

Salesmanship, more than anything else, is needed to bring industrial and social conditions back to normal. During the last five years the sales sense of the nation has gone to sleep. It seems to me that many merchants nowadays, in spite of their complaints about business depression, are content to sit back and wait the advent of better conditions when they should be out organizing selling campaigns to induce their customers to buy. Salesmen are like the Marines, they should be the first to enter the fight to restore business conditions to normal.

The New York Telephone Company seized this statement to use as an "interest

arouser" with which to open an advertisement in *The Saturday Night*, published in Buffalo, New York. It then used the incident given below to show the efficiency of telephone salesmanship:

A Buffalo business house recently made telephone toll calls to 35 out-of-town customers who had not given an order in two months. Here are the results:

1. Fourteen orders.
2. Six customers requested recalls within two days.
3. Six declined to buy.
4. Nine were out of business.

These 35 calls gave that concern an accurate up-to-the-minute picture of a part of their selling territory and 40 per cent of them produced orders. That is systematic, scientific selling—utilizing that marvelous little telephone instrument on your desk to go after business quickly and at small cost. That's fighting for business. That's the kind of sales activity that will put Better Business on the sales map.

Administration may be giving the Telephone Company and *The Saturday Night* a little free publicity, but it believes this advertisement is worth passing along.

During the World's Championship Baseball Games, played in New York City, *The New York Tribune* furnished newsdealers with a large blank score card. It then made special arrangements with the Telephone Company whereby the telephone operators in the office of *The Tribune* could send the score by innings to the various newsstands scattered over the city. A note on the score card advised the reader about the paper to buy for a good account of the game.

Numerous instances could be mentioned if space permitted to show how the telephone may supplement the work of the salesman in speeding up salesmanship.

ACCURATE ANALYSIS

An interesting feature in *Life with the Lincoln*, house-organ of the Lincoln National Life Insurance Company, is a series of articles by the personnel manager of the organization. He gives a sage bit of advice to the department heads and executives of the concern. Under the general title "Leadership," is subheaded "Planning and Organizing" as follows:

Accurate analysis is the basis of wise planning. You must have a clear vision and be able to concentrate all your thought on the problem under consideration and your biggest problem is to determine how the work is to be done and then to organize it to get the most efficient results. In organizing it is necessary to have a resourceful and thorough knowledge of the work in order to intelligently choose the right method of procedure, but in many instances the success of your endeavors depends on quick thinking along original lines.

Always bear this thought that there are three basic fundamentals by which you can plan and organize, namely:

1. Standardization
2. Specialization
3. Elimination of waste

SAFETY CAMPAIGN

Moving-pictures and lectures in the Walworth Plant will introduce a safety campaign during the coming winter months. *The Walworth Craftsman* announces that in the past year the large number of accidents due to carelessness of employees has cost the company and the employees a large sum of money.

The first moving-picture shown was an allegorical production which showed the troubles caused by Old King Carelessness and his crowd of imps, "I didn't think," and "I should worry."

Throughout the year these movies will be shown, preceded by a speaker who will point out safety methods and safety measures.

"BRASS TACKS"

Howard Coonley, President of The Walworth Company, publishes monthly in *The Walworth Craftsman* a brief heart-to-heart talk with the employees. The title of the little talk for the current month is "The Human Side" and the series of articles is headed, "Walworth and You."

"Success of every company depends entirely on its ability to meet competitive conditions through its superior efficiency," says the writer. The employees are urged to read the talks and to "get what's on the president's mind" when he tells what the company is and does and what its prosperity means to each employee as an individual.

The most prosperous company will be that one in which every unit and every individual is co-operating for the common purpose. Under conditions such as we are now facing, an industry is like the human body, each important organ of which is dependent on every other. By no means does the man with the most muscle always win the battle. It is that one whose physical and mental qualities are conditioned to the highest degree, whose clear, quick thought obtains an immediate response from his nerves and sinews, and who, rejoicing in his fitness, uses his power in the right way.

ANALYSIS OF TURNOVER

Editor of Administration:

Enclosed is my check for $5 for one year's subscription to *Administration*—The Journal of Business Analysis and Control. Kindly forward this magazine to the above address.

I have been reading with interest the article "Analysis and Turnover" written by Howell H. Reeves and appearing in your October issue. I have been unable to determine just what is meant by the paragraph shown on page 440 referring to figure four. The portion I fail to get is that in the paragraph where it refers to the total area as representing 7200 socket months, nor is it clear how the author arrives at this figure, as I take it to mean that the stock curve is represented by the triangle bounded by the hypothenuse marked "Stock" and by the base indicating the months and by the altitude designated as "Sockets." Therefore, I cannot correlate the 7200 figure with the graphic chart.

If an explanation can be furnished I will most certainly appreciate the same as I consider this article one of the finest I have ever had occasion to read.

Yours truly,
(Signed) C. O. Van Valer.
San Jose, California.

Dear Mr. Lee:

In reply to Mr. Van Valer's inquiry enclosed with your letter of November 1, it might be well to begin by stating that where the expression "stock curve" is used, an area is not meant, but an actual curve or line. In Figure 4, the "stock curve" is the straight line sloping down to the zero line on the right and marked "stock." If you put a pencil on any point in this line and look horizontally across to the left, the number of sockets indicated by the vertical scale is the number in stock at the particular time indicated on the base line vertically beneath the point where the pencil rests.

The area of the triangle bounded by the horizontal base line along which the months are indicated, the vertical base line marked "sockets" and the hypothenuse marked "stock" is the area under the stock curve and represents the "equivalent stock." This area can be found in several ways. In this particular case, the area, being enclosed by a right angle triangle, was found by using the familiar equation for the right angle triangle where the area is equal to one-half the altitude multiplied by the base. The altitude is 1200 sockets. One-half of this is 600 sockets. The base is 12 months. The product is 600 sockets times 12 months, or 7200 socket months.

As turnover should be figured on a yearly basis, this is reduced to the yearly basis by dividing by 12, the number of months in the year, which gives 600 socket years.

Thank you very much for referring this inquiry to me and I hope I have answered it satisfactorily.

Sincerely yours,
(Signed) Howell H. Reeves,
Commercial Engineer,
General Electric Company.
Schenectady, N. Y.

OFFICE CAFETERIA

Feeding the telephone girls of the New York Telephone Company, has been brought up to a science. For 26 cents, says *The Telephone Review*, house-organ of the company, an employee can secure an appetizing, satisfying lunch of salad, stringbeans, milk or coffee, bread, butter, and pudding.

The monthly order of the Lunchroom Manager discloses staggering amounts: 31,213 pounds of meat, 2,635 dozen eggs, 4,703 pounds of coffee, and 1,000,000 paper napkins. The monthly order of ice-cream amounts to 44,475 quarts, 8,143 pounds of butter, 21,905 pounds of sugar, etc.

The average sales a day are 3,452. The routine of the gigantic organization is han-

dled by experts so that meals can be served daily with neatness and speed.

"In short," continues the article, "every care is taken to make the dining-rooms department efficient and appetizing and as low-priced as possible."

THE HOUSE ENCYCLOPÆDIA

A manufacturing concern which has installed its own printing plant, at a considerable saving in printing bills, is constantly finding new uses for this innovation. One of its ideas which has produced most satisfactory results is of this order:

Each sales representative is furnished a large loose-leaf book which contains all of the advertising, literature and other printed matter put out by the company. The book itself is purchased through regular channels but its contents are made-up, arranged, and kept up to date by the plant printing office.

With this book in his possession, the salesman in a few moments' time can give the customer a comprehensive idea of just what the company is doing in a publicity way, what are the latest developments in the line as told by clippings from authoritative trade publications, how the company is keeping up with these developments as shown by specification exhibits and the like, and all other news of a nature which might interest the company's customers.

It has been found that the customer accepts as much more reliable than the salesman's word the printed account of the latest information relative to the article offered him. The book also makes unnecessary a lot of circularizing of customers. The saving in this makes up for the cost involved in getting up the book.

AN IDEA FILE

Ideas are perhaps the most valuable and yet the most wasted product of the executive mind. At least that is what one of the managers of a large New York engineering firm has discovered.

This manager has occasion to travel considerably and visits many industrial plants in the course of a year. While gazing out of a Pullman window or scouting about a factory he has found that ideas come much more readily, and with greater freshness, than when at work in the home office.

A few years ago he arrived home after a trip and tried to recall a particularly good idea which had come to him while on the train. Think as he would the idea was gone. And then he awoke suddenly to the fact that scores of his good ideas were slipping away from him in like manner. So he started an idea file.

Now, when on the road, this manager jots down every stray idea as soon as it comes to him. When he gets back to his office he turns these notes over to his secretary who types them on slips, classifies them and files them away for future use. When there is a dull hour in the offices, or a few subordinates seem not to be overburdened with work, the executive calls for his idea file, selects a few of the ideas which fit in with the work of the idle ones, and turns one of them over to be developed.

During the business depression there were times when work in the office and in the planning rooms was almost at a standstill. That is, it would have been had it not been for the idea file. As soon as routine slowed up, one of the idea slips would be picked from the file and every idle man in the place instructed to busy himself on it.

By this method good ideas are not only preserved but they are worked out and developed in a way that will make them practical. The executive himself would not have a quarter of the time necessary to develop his stray ideas; but by keeping them intact and turning them over to others at opportune times, he has not only been able to keep the office busy, get worthwhile results every now and then, but also to encourage individual thinking on the part of those under him.

As it works out at this day all incomplete ideas originating about the executive offices, which are not in line with immediate needs, are filed away for some future occasion when someone will have time to make something out of them. Oftentimes a good idea which one man has not the experience nor ability to fully develop will turn into something good after a number of men have given it thought and study.

WAREHOUSE